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MEASUREMENT MODEL TO ASSESS MARKET-DRIVING ABILITY IN CORPORATE ENTREPRENEURSHIP

by

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29669953

SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

PhD IN ENTREPRENEURSHIP

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

SUPERVISOR: PROF JJ VAN VUUREN

Pretoria, South Africa August, 2011

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DECLARATION OF ORIGINAL WORK

I, Nadin Wörgötter, declare that the thesis, which I hereby submit for the degree PhD in Entrepreneurship at the University of Pretoria, is my own work, except where indicated, and has not previously been submitted by me for a degree at this or any other tertiary institution.

_____ _____

SIGNATURE DATE

ACKNOWLEDGEMENTS

I would like to thank the following people without their support this thesis would not have been possible.

- My promoter Prof. Jurie J. van Vuuren, who supported me from the very beginning. Your encouragement and support guided me through difficult times.
- My fiancé Andreas Stöffler. Your positive thoughts, belief in me and unconditional support throughout all those years give me strength. You make every day special and I am grateful to have a place in your life.
- My parents, Harald and Johanna who have always encouraged me in my different plans.
- My friends in South Africa, Austria and Germany for their positive thoughts and encouragement. Especially, Bettina and Harald Paar, Maria Lindberg, Emsi van Heerden and Magdalena Meusburger.
- Mamapudi Nkgadima, Lerato Sedibe and Zinzile Ntoyiwa for their support with the empirical study.
- All respondents and management of organisations that participated in the study.
- The library staff at the University of Pretoria, especially Rachel Mahlangu and Refilwe Matatiele for their support in obtaining articles and books from all over the world.
- Marion Marchand for the speedy editing of the thesis.

SUMMARY

MEASUREMENT MODEL TO ASSESS MARKET-DRIVING ABILITY IN CORPORATE ENTREPRENEURSHIP

by

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Two major objectives of organisations are to achieve firm performance and to maintain a competitive advantage; strategies to achieve these objectives differ widely. Research at the entrepreneurship and marketing interface investigates the application of both dimensions on firm activities, processes and behaviour to achieve different performance parameters. In the field of entrepreneurial marketing research two key approaches are discussed: a market-driven and a market-driving approach.

Market-driven approaches, though applied by many organisations, are less successful in allowing organisations to outperform others and create long-term competitive advantage. Market-driving, on the other hand, is considered to contribute to enduring competitive advantage. Current research indicates that the construct of market driving and the factors that influence it are not well understood.

The purpose of this study is therefore to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

In this research, constructs drawn from the literature study were used to formulate the conceptual framework and statistical model. The empirical part of the study used a fully structured telephonic questionnaire and the respondents were managers in organisations in the South African healthcare industry. Data analysis employed structural equation modelling.

The results indicate that market driving can reliably be measured by three activities: market sensing; influencing customer preferences; and alliance formation. Entrepreneurial behaviour, strategic orientation and entrepreneurial capital have a more positive impact on market-driving ability than corporate entrepreneurial management. The study demonstrated that market-driving ability significantly benefits firm performance and relative competitive strength.

The study provides a solid basis for future research in the field. Moreover, the results of the study can be applied by organisations in a three-step process. First, organisations can assess their current level of market driving. Second, they can assess influencing factors, and finally identify areas for improvement. Through continuous reassessment organisations can work on their market-driving ability to achieve their organisational objectives.

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CHAPTER 1:
INTRODUCTION AND BACKGROUND TO STUDY

1.1 INTRODUCTION

As pointed out by Morris, Kuratko and Covin (2008:4), in today's business the external environment is constantly changing. New technologies are developed, regulations and laws change, and competition takes place on a global level. Organisations need to have strategies and practices in place to maintain a competitive advantage and achieve firm performance. "The riskiest strategy of all is simply to pursue business as usual" (Morris *et al.,* 2008:4).

In pursuit of firm performance and staying ahead of the competition, various approaches have been outlined by both the marketing and entrepreneurship disciplines. Starting in 1982, several researchers assessed the commonalities between the two fields of research and how each could benefit from the other. It has been found that both research disciplines share common constructs and concepts. Research at the interface of entrepreneurship and marketing has been termed "entrepreneurial marketing" (Collinson, 2002; Collinson & Shaw, 2001; Davis, Morris & Allen, 1991; Hills, 1994; Hills & LaForge, 1992; Hisrich, 1992). Although a common definition of entrepreneurial marketing has not been established so far, certain key aspects have been identified that bring together concepts of both disciplines (Schindehutte, Morris & Pitt, 2009:29). Various dimensions of entrepreneurial marketing have been described:

- Opportunity focus (Miles & Darroch, 2006; Morris, Schindehutte & LaForge, 2002);
- Proactiveness (Morris & Paul, 1987; Morris *et al*., 2002);
- Risk-taking (Morris & Paul, 1987; Morris *et al*., 2002);
- Innovativeness (Morris & Paul, 1987; Morris *et al.,* 2002);
- Resource leveraging (Hisrich, 1994; Morris *et al.,* 2002);
- Customer intimacy (Morris *et al*., 2002);
- Value creation (Morris *et al*., 2002) and

- Constantly renewing competitive position (Miles & Darroch, 2006).

Within the field of entrepreneurial marketing, firms can take a market-driven or a market-driving approach. A market-driven approach relates to learning, understanding and responding to customer needs in an existing market (Schindehutte *et al.,* 2009:37). Market driving, on the other hand, has been described as an approach that considers existing and new markets, tries to shape, change, or create the market and/or behaviour of all stakeholders involved (Barlow Hills & Sarin, 2003; Harris & Cai, 2002; Jaworski, Kohli & Sahay, 2000; Kumar, Scheer & Kotler, 2000; Schindehutte *et al.*, 2009).

As will be outlined in chapter three in the literature review, several researchers have been concerned with describing the essential factors of market driving, as well as its antecedents and consequences. However, the construct of market driving is not well understood and requires further research, especially regarding the measurement of market driving, influencing factors on market-driving ability and outcomes of a market-driving approach (Barlow Hills & Sarin, 2001, 2003; Carrillat, Jaramillo & Locander, 2004; Ghauri, Tarnovskaya & Elg, 2008; Harris & Cai, 2002; Jaworski *et al.*, 2000; Kumar *et al.,* 2000; Schindehutte, Morris & Kocak, 2008).

The purpose of this study is to develop a measure for market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

This chapter provides an introduction to the research. It will briefly outline the literature review, the research problem, the purpose of the study, research objectives, hypotheses, research methodology and importance and benefits of the study. An outline of chapter two to seven of this study is presented.

In this study it was found that various terms were used by different authors, such as business, firm, organisation or corporation. These terms are used for businesses that follow a profit-seeking purpose. The study will also describe various constructs and concepts in the field of entrepreneurship and marketing. Diamantopoulos and Schlegelmilch (2000:21) describe a concept as an "… abstraction formed from

observations from numerous particular happenings." A construct refers to "… concepts that have been consciously and deliberately invented for particular scientific purposes." It is further noted that "… the terms 'concept' and 'construct' are often used interchangeably". Various authors cited in this study use the terms interchangeably. A clear distinction between the terms will be made for the development of the market-driving framework.

1.2 LITERATURE REVIEW

The literature review will present a brief overview of the definitions of entrepreneurship, corporate entrepreneurship, marketing and entrepreneurial marketing. The antecedents and consequences of an entrepreneurial and a market orientation will be outlined in order to establish the conceptual model of market-driving ability in corporate entrepreneurship. This is followed by a discussion of various instruments to measure entrepreneurial and market orientation.

1.2.1 Defining entrepreneurship, corporate entrepreneurship, marketing and entrepreneurial marketing

Researchers have analysed entrepreneurship from a content and process perspective (Churchill & Muzyka, 1994:16). The process of entrepreneurship involves opportunity identification and evaluation, the development of a business plan, assessing the required resources and finally the management of the firm (Hisrich, Peters & Shepherd; 2008:9). One aspect that is considered by various researchers is the value-creation aspect of entrepreneurship (Churchill & Muzyka, 1994; Gartner, 1990; Ireland, Hitt, Camp & Sexton, 2001; Morris, 1998).

For the purpose of this study, entrepreneurship is considered as "… the process through which individuals and teams create value by bringing together unique packages of resource inputs to exploit opportunities in the environment. It can occur in any organisational context and results in a variety of possible outcomes, including new ventures, products, services, processes, markets and technologies." (Morris, 1998:16).

Sharma and Chrisman (1999:18) describe the difference between "independent entrepreneurship" and "corporate entrepreneurship". Independent entrepreneurship relates to activities creating a new organisation without any connection to an existing organisation. Corporate entrepreneurship refers to activities in corporate venturing and strategic renewal. Corporate venturing has been described as adding a new business to the corporation. Strategic renewal or strategic entrepreneurship relates to activities and processes that target change in the organisation's business, its strategy or structure, to create value (Guth & Ginsberg, 1990:6; Morris *et al*., 2008:80; Sharma & Chrisman, 1999:18).

Kuratko and Morris (2003:26) consider corporate entrepreneurship as a "… framework for the facilitation of ongoing change and innovation in established organisations".

For the purpose of this study, corporate entrepreneurship is considered as a broader framework in which strategic renewal activities, such as innovation, risk-taking and proactiveness are performed to achieve firm performance and a competitive advantage.

Marketing has a rich history of schools of thought that have been used to describe marketing's purpose and activities (Sheth, Gardner & Garrett, 1988). While marketing has in the past been strongly associated with consumer behaviour, the strategic focus is becoming more important in order to achieve firm performance and competitive advantage (Barrett, Balloun & Weinstein, 2000:57; Sheth *et al.,* 1988:4).

Kotler and Armstrong (2010:29) state that marketing is "… the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return". This perspective is applied to this study.

As outlined in the introduction to this chapter, the study of entrepreneurial marketing is a very young discipline which only started to emerge about thirty years ago. The similarities between entrepreneurship and marketing have been studied to provide a common basis for future research. Although a consistent definition has not been

established so far, a wide variety of constructs, such as strategic orientation, market orientation and entrepreneurial orientation are considered to be relevant for the study of entrepreneurial marketing (Collinson & Shaw, 2001; Hills, Hultman & Miles, 2008; Schindehutte *et al*., 2009). For the purpose of this study, entrepreneurial marketing is defined as a firm behaviour that is primarily reflected through an entrepreneurial and a market orientation of the organisation.

1.2.2 Entrepreneurial marketing: entrepreneurial orientation and market orientation as the core elements

Various researchers have stated that an entrepreneurial and market orientation are the key elements for entrepreneurial marketing (Hills & LaForge, 1992:34; Hultman, 1999:60; Miles & Darroch, 2006:486; Morris *et al.*, 2002:5).

Entrepreneurial orientation has been described as consisting of three to five dimensions. Lumpkin and Dess (1996) state that the construct includes autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness. However, in most research studies the three dimensions of risk-taking, innovativeness and proactiveness are investigated (Kreiser Marino & Weaver, 2002; Morris, 1998; Rauch, Wiklund, Lumpkin & Frese, 2009).

Various research studies include antecedents and consequences of an entrepreneurial orientation. Covin and Slevin (1991:7-15) describe three different antecedents. First are, external variables, which relate to environmental variables; second, strategic variables, which reflect a firm's posture towards growth and investment; and third, internal variables, such as top management values and philosophies. Internal variables have also been studied by other researchers who have included management style, organisational resources, organisational structure and culture in their studies (Covin & Slevin, 1988:218; Ireland *et al.,* 2001:57; Khandwalla, 1976/77:22).

The outcomes of an entrepreneurial orientation have been measured as improved firm performance assessed by financial and non-financial measures, which can be

measured subjectively or objectively (Covin & Slevin, 1991:17; Lumpkin & Dess, 1996:153).

Corporate entrepreneurship is considered to be a specific strategy that is reflected in the organisation's architecture and the processes that promote entrepreneurship throughout the organisation (Ireland, Covin & Kuratko, 2009:38).

External and internal variables that influence corporate entrepreneurship have been discussed by various researchers (Guth & Ginsberg, 1990; Khandwalla, 1987; Schindehutte, Morris & Kuratko, 2000; Zahra, 1991). Internal factors that have most often been studied are management support, work discretion, rewards/reinforcement, resources and time availability and organisational boundaries (Holt, Rutherford & Clohessy, 2007; Hornsby, Naffziger, Kuratko & Montagno, 1993; Kuratko, Hornsby & Goldsby, 2004; Kuratko, Hornsby, Naffziger & Montagno, 1993).

Outcomes of corporate entrepreneurship relate to individual and organisational outcomes (Kuratko *et al*., 2004:83).

The market orientation of a firm has been described by Kohli and Jaworski (1990), Jaworski and Kohli (1993), Kohli, Jaworski and Kumar (1993) and Narver and Slater (1990). The first three groups of researchers consider a firm's activities towards information generation, information dissemination and responsiveness to information. Narver and Slater (1990) build the market orientation construct around customer orientation, competitor orientation and interfunctional coordination. A long-term focus and profitability have also been considered.

Antecedents for market orientation are very similar to those of an entrepreneurial orientation. Management focus and willingness to take risks and innovativeness are considered to be important. Furthermore, organisational structures can either enhance or diminish the effectiveness of information generation and dissemination activities (Jaworski & Kohli, 1993; Kirca, Jayachandran & Bearden, 2005; Kohli & Jaworski, 1990).

The consequences of a market orientation approach are also in line with the outcomes of an entrepreneurial orientation. Firm performance and competitive advantage are investigated, as well as customer loyalty (Grinstein, 2008a; Jaworski & Kohli, 1993; Kohli & Jaworski, 1990; Kirca *et al.*, 2005).

1.2.3 Conceptual model of market-driving ability in corporate entrepreneurship

Within the research into entrepreneurial marketing, a market-driven and a market-driving approach have been studied.

Market-driven firms try to understand and learn from stakeholders in an existing market (Jaworski *et al.,* 2000; Schindehutte *et al.,* 2008). Market-driven firms also focus on a reactive or proactive approach to market orientation. A reactive approach is reflected in learning from customers through information generation. A proactive approach tries to uncover latent customer needs to serve customers better in future (Day, 1998; Narver, Slater & MacLachlan, 2004; Slater & Narver, 1998; Tuominen, Rajala & Möller, 2004).

Various researchers have studied market driving and its influencing factors. It is argued that exceptional performance cannot be assessed with the current understanding of market-driven organisations. Exceptional performance has been associated with a firm's ability to achieve market driving (Kumar *et al*., 2000; Schindehutte *et al*., 2008). A market-driving approach is characterised by shaping, changing and creating markets and/or behaviour of all stakeholders involved in the process. Furthermore, market-driving firms are characterised by an entrepreneurial, market and technology orientation (Barlow Hills & Sarin, 2003; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al.,* 2000; Narver *et al*. 2004; Schindehutte *et al*., 2008).

Researchers point out that there is a need for the measurement of market driving, as well as a measurement of influencing factors that facilitate or hinder market driving (Barlow Hills & Sarin, 2003; Carrillat *et al.,* 2004; Ghauri *et al.,* 2008; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al*., 2000; Narver *et al.* 2004; Schindehutte *et*

al., 2008). Previous studies that followed a qualitative research approach to studying market driving provide a good basis for the development of a conceptual model that can further be statistically tested.

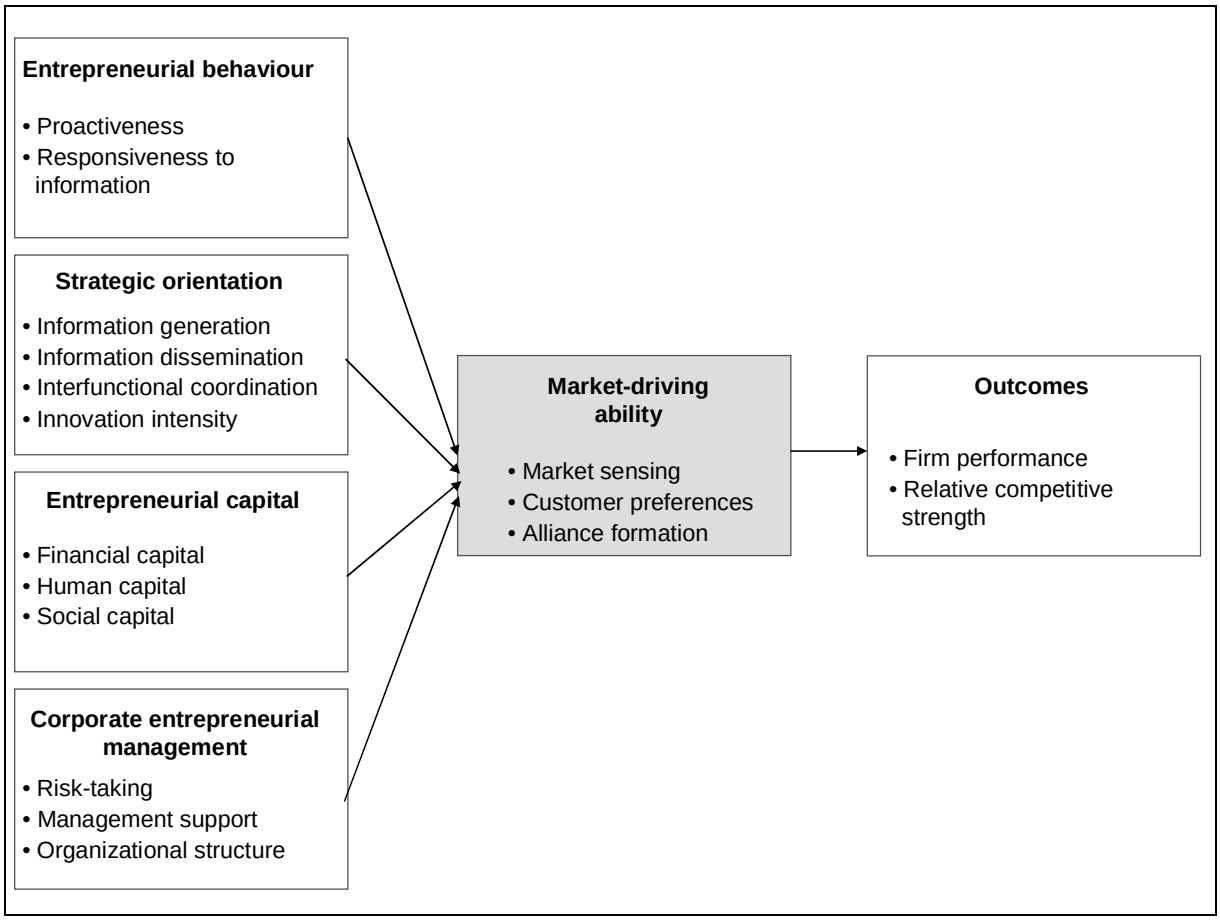
For the development of the conceptual model of market-driving ability in a corporate context, three parts were considered:

- Measurement of market driving
- Firm-internal influencing factors on market-driving ability
- Outcomes of a market-driving ability

For the purpose of this study, market driving will be measured by using three concepts, namely market sensing, influencing customer preferences and alliance formation. The influencing factors are divided into four aspects. First, corporate entrepreneurial management consists of risk-taking, management support and organisational structure. Second, entrepreneurial capital covers financial, human and social capital. Third, strategic orientation covers information generation, information dissemination, interfunctional coordination and innovation intensity. The last construct is entrepreneurial behaviour, which relates to proactiveness and responsiveness to information. The outcome parameters of a market-driving ability are measured by firm performance and relative competitive strength.

The following figure summarises the conceptual model of market-driving ability in corporate entrepreneurship.

FIGURE 1.1: Conceptual model of market-driving ability in corporate entrepreneurship



Source: Author's own compilation

1.2.4 Measuring instruments and statistical model of market-driving ability

Measuring instruments for market driving have so far not been specifically developed. However, several related measures can be identified which were partly used for the measurement in this study. Barringer and Bluedorn (1999:423) developed the environmental scanning scale, which measures efforts towards scanning activities. Narver *et al.* (2004:336) developed the proactive market orientation (MOPRO) scale, which measures activities towards monitoring customer behaviour and exceeding customer expectations. Alliance formation has been measured by the absolute number of alliances as well as the concept of trust (Gulati, 1999:405; Kale, Singh & Perlmutter, 2000:220; Rothaermel & Deeds, 2006:441).

A number of measuring instruments are available for entrepreneurial and market orientation. The following paragraphs present a selected number of measuring

instruments that have been applied in this study. As will be outlined later in this study, a specific scale development process by Rossiter (2002) has been followed to arrive at these measures.

Corporate entrepreneurial management considers measures for risk-taking, management support and organisational structure. Risk-taking measures have been described by Miller and Friesen (1982:7-10) and have been used in many previous studies (Kreiser *et al*., 2002; Miles & Arnold, 1991; Morris & Sexton, 1996; Smart & Conant, 1994). Management support consists of measures adapted from Hornsby, Kuratko and Zahra (2002). Organisational structure employs measures that were derived from Khandwalla (1977).

Entrepreneurial capital consists of three concepts: financial, social and human capital. Measures for financial capital are partly self-constructed, and one measure is adapted from Miller and Friesen (1982). Social capital consists of self-constructed measures for which ideas were taken from Baron and Markman (2000). Human capital is also a self-constructed concept, taking into consideration ideas from Rauch, Frese and Utsch (2005) and Unger, Rauch, Frese and Rosenbusch (2011).

Strategic orientation consists of four concepts. Measures for information generation and information dissemination have used items from Jaworski and Kohli (1993). Those for interfunctional coordination considered measures developed by Narver and Slater (1990). Finally, those for innovation intensity took into consideration items from the study by Miller and Friesen (1982).

Entrepreneurial behaviour considers proactiveness and responsiveness to information. Proactiveness measures were derived from Lumpkin and Dess (2001). Items related to responsiveness to information were adapted from Jaworski and Kohli (1993) and Kohli *et al.* (1993).

Finally, the outcomes parameters are firm performance and relative competitive strength. Both concepts have been extensively studied within the entrepreneurship and marketing field. As outlined by Moorman and Rust (1999:187), managers of organisations are often unwilling to give objective information about the financial

performance. Therefore subjective measures that assess the perception of the respondents have been used in previous research. These items were self-constructed. Relative competitive strength was influenced by some measures from Burke (1984).

In statistical modelling, causal modelling is considered to be the most prominent approach for theory development (Jaccard & Jacoby, 2010:137). Within the field of causal modelling, structural equation modelling (SEM) is used to assess cause and effect relationships (Pearl, 2007:135). Since the focus of this study is to explore the influence of firm-internal factors on market-driving ability, a structural equation approach is most appropriate. SEM consists of two parts, a measurement model and a structural model.

The measurement model considers the concepts and their relationship with the indicators. In order to produce good measures, a scale development process needs to take place. Rossiter (2002:306,308) describes the process of generating and selecting items to measure a construct. The process will be further outlined in chapter four.

The structural model refers to the relationships between latent variables. Latent variables have been described as variables that cannot directly be observed. Latent variables require a set of observable variables to define them (Bollen, 1989:11; Diamantopoulos, Riefler & Roth, 2008:1204).

Multidimensional constructs can have different measurement models. On the first level the relationship can be formative and on the second level reflective, or vice versa (Burke Jarvis, MacKenzie & Podsakoff, 2003:204). For formative models, the dimensions cause the construct; they make the construct appear. Formative models do not require the dimensions to be correlated, as they represent distinct causes of the construct. In the reflective model the causality flows from the construct to the dimensions. Therefore the dimensions need to be positively correlated, since they reflect the same construct (Bollen & Lennox, 1991:308; Diamantopoulos *et al*., 2008:1204; Edwards, 2001:147; Law, Wong & Mobley, 1998:745; Law & Wong, 1999:146; MacCallum & Browne, 1993:533).

Model misspecification can have serious effects which can lead to misleading conclusions about relationships between constructs. Furthermore, it has been noted that goodness of fit indices are not always in a position to detect misspecification (Burke Jarvis *et al.,* 2003:207; MacKenzie, 2003:324). Therefore it is important to follow the steps outlined by Rossiter (2002) for scale development.

The statistical model for market-driving ability in corporate entrepreneurship is derived from the conceptual model. Moderating variables such as the industry focus and management level will also be considered.

1.3 RESEARCH PROBLEM

The literature review shows that entrepreneurship and marketing research share a substantial amount of commonality. Various concepts relating to innovation, flexibility, change and opportunities, as well as managerial and organisational principles, are commonly used in both disciplines. One of the goals of both disciplines is to create value and understand and describe firm performance and relative competitive strength. Research at the interface is especially concerned with the explanation of exceptional performance, which cannot be explained with the current understanding of a market-driven organisation. Exceptional performance has been associated with a firm's ability to achieve market driving (Kumar *et al*., 2000; Schindehutte *et al*., 2008).

It has been argued that market driving is a specific organisational ability that requires several activities to be able to shape, change and create the market structure and/or the behaviour of market players. It has also been stated that in order to pursue market driving, certain firm-internal capabilities need to be demonstrated, and the outcomes of a market-driving approach relate to firm performance and relative competitive strength (Barlow Hills & Sarin, 2003; Harris & Cai, 2002; Jaworski *et al*. 2000, Kumar *et al*., 2000; Schindehutte *et al*., 2008).

The purpose of this study is to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

The management question that follows is: Can market driving and market-driving ability and its influencing factors be assessed in the South African healthcare industry?

From the management question the following more specific research questions can be formulated (Cooper & Schindler, 2008:118):

- Can market driving be measured by assessing a firm's activities in market sensing, influencing customer preferences and alliance formation?
- Can internal factors such as a firm's orientation towards corporate entrepreneurial management; entrepreneurial capital; strategic orientation, and entrepreneurial behaviour predict market-driving ability?
- Can firm performance and relative competitive strength be related to the market-driving ability of a firm?
- Do moderating factors such as management level and industry focus influence the strength of the relationship between the internal factors and market-driving ability?

The construct of market driving, its influencing factors and outcomes, is currently not well understood. So far no formal study has been conducted in South Africa that addresses the measurement of market driving and determines influencing factors on market-driving ability and its consequences.

1.4 PURPOSE OF THE STUDY

The purpose of the study is fourfold. First, the study aims to give an understanding of the measurement of market driving in corporate entrepreneurship. Second, firm-internal influencing factors on market-driving ability are determined. Third, moderating effects such as the management level and the industry focus, on the relationship between firm-internal factors and market-driving ability can be identified. Finally, the outcomes of a market-driving ability are assessed considering firm performance and relative competitive strength.

The study will provide organisations that wish to assess and increase their level of market driving in their business with suggestions and hence provide a starting point for their internal analysis.

1.5 RESEARCH OBJECTIVES

The primary research objective is to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

The primary research objective is supported by secondary objectives which are classified into objectives that can be achieved by means of a literature study and by means of an empirical study focusing on the case of the healthcare industry.

The literature study determines:

- The link between entrepreneurship and marketing research at the interface;
- The constructs and concepts that are common to the disciplines of marketing and entrepreneurship;
- Various research studies that have investigated market-driving activities in firms;
- Constructs and concepts that have been taken from the marketing and entrepreneurship field to explain market driving; and
- Constructs and concepts from both disciplines that are considered to impact on market-driving ability.

On the grounds of the literature study, a conceptual model of market-driving ability in corporate entrepreneurship was developed. Statistical modelling by means of a case study was used to determine the predictive quality of the model.

The empirical study determines:

- Whether market driving can be measured by market sensing, influencing customer preferences and alliance formation;
- Which firm-internal factors influence market-driving ability;
- Whether market-driving ability influences various outcome parameters; and

- Whether moderating variables influence the relationship between firm-internal factors and market-driving ability.

The scope of the research is the South African healthcare industry, which comprises four different segments such as the pharmaceutical industry, medical device manufacturers, wholesalers and distributors of pharmaceuticals and open medical schemes. The research does not consider environmental factors that might influence a firm's decision making, such as the current development of a national health insurance system in South Africa.

1.6 HYPOTHESES

The following hypotheses are formulated for this study:

$H_0$1: Market driving cannot be measured by market-sensing activities.

$H_0$2: Market driving cannot be measured by activities related to influencing customer preferences.

$H_0$3: Market driving cannot be measured by alliance formation activities.

$H_0$4: Corporate entrepreneurial management cannot be measured by risk-taking activities.

$H_0$5: Corporate entrepreneurial management cannot be measured by management support.

$H_0$6: Corporate entrepreneurial management cannot be measured by organisational structure.

$H_0$7: Entrepreneurial capital does not reflect financial capital.

$H_0$8: Entrepreneurial capital does not reflect human capital.

$H_0$9: Entrepreneurial capital does not reflect social capital.

$H_0$10: Strategic orientation cannot be measured by information generation.

$H_0$11: Strategic orientation cannot be measured by information dissemination.

$H_0$12: Strategic orientation cannot be measured by interfunctional coordination.

$H_0$13: Strategic orientation cannot be measured by innovation intensity.

$H_0$14: Entrepreneurial behaviour cannot be measured by proactiveness.

$H_0$15: Entrepreneurial behaviour cannot be measured by responsiveness to information.

$H_0$16: Corporate entrepreneurial management does not positively influence market-driving ability.

$H_0$17: Entrepreneurial capital does not positively influence market-driving ability.

$H_0$18: Strategic orientation does not positively influence market-driving ability.

$H_0$19: Entrepreneurial behaviour does not positively influence market-driving ability.

$H_0$20: Market-driving ability does not positively influence firm performance.

$H_0$21: Market-driving ability does not positively influence relative competitive strength.

$H_0$22: The path between **corporate entrepreneurial management** and market-driving ability will not be different between various levels of management.

$H_0$22a: The path between corporate entrepreneurial management and market-driving ability will not differ between top management (level 1) and middle management (level 2).

$H_0$22b: The path between corporate entrepreneurial management and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

$H_0$22c: The path between corporate entrepreneurial management and market-driving ability will not differ between top management (level 1) and junior management (level 3).

$H_0$23: The path between **entrepreneurial capital** and market-driving ability will not differ between various levels of management.

$H_0$23a: The path between entrepreneurial capital and market-driving ability will not differ between top management (level 1) and middle management (level 2).

$H_0$23b: The path between entrepreneurial capital and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

$H_0$23c: The path between entrepreneurial capital and market-driving ability will not differ between top management (level 1) and junior management (level 3).

$H_0$24: The path between **strategic orientation** and market-driving ability will not differ between various levels of management.

$H_0$24a: The path between strategic orientation and market-driving ability will not differ between top management (level 1) and middle management (level 2).

$H_0$24b: The path between strategic orientation and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

$H_0$24c: The path between strategic orientation and market-driving ability will not differ between top management (level 1) and junior management (level 3).

$H_0$25: The path between **entrepreneurial behaviour** and market-driving ability will not differ for various management levels.

$H_0$25a: The path between entrepreneurial behaviour and market-driving ability will not differ between top management (level 1) and middle management (level 2).

$H_0$25b: The path between entrepreneurial behaviour and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

$H_0$25c: The path between entrepreneurial behaviour and market-driving ability will not differ between top management (level 1) and junior management (level 3).

$H_0$26: The path between **corporate entrepreneurial management** and market-driving ability will not differ for various industries.

$H_0$26a: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.

$H_0$26b: The path between corporate entrepreneurial management and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

$H_0$26c: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

$H_0$26d: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical manufacturers and medical schemes.

$H_0$26e: The path between corporate entrepreneurial management and market-driving ability will not differ between medical device manufacturers and medical schemes.

$H_0$26f: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical distributors/wholesalers and medical schemes.

$H_0$27: The path between **entrepreneurial capital** and market-driving ability will not differ for various industries.

$H_0$27a: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.

$H_0$27b: The path between entrepreneurial capital and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

$H_0$27c: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

$H_0$27d: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical manufacturers and medical schemes.

$H_0$27e: The path between entrepreneurial capital and market-driving ability will not differ between medical device manufacturers and medical schemes.

$H_0$27f: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical distributors/wholesalers and medical schemes.

$H_0$28: The path between **strategic orientation** and market-driving ability will not differ for various industries.

$H_0$28a: The path between strategic orientation and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.

$H_0$28b: The path between strategic orientation and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

$H_0$28c: The path between strategic orientation and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

$H_0$28d: The path between strategic orientation and market-driving ability will not differ between pharmaceutical manufacturers and medical schemes.

$H_0$28e: The path between strategic orientation and market-driving ability will not differ between medical device manufacturers and medical schemes.

$H_0$28f: The path between strategic orientation and market-driving ability will not differ between pharmaceutical distributors/wholesalers and medical schemes.

$H_0$29: The path between **entrepreneurial behaviour** and market-driving ability will not differ for various industries.

$H_0$29a: The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.

$H_0$29b: The path between entrepreneurial behaviour and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

$H_0$29c: The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

$H_0$29d: The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical manufacturers and medical schemes.

$H_0$29e: The path between entrepreneurial behaviour and market-driving ability will not differ between medical device manufacturers and medical schemes.

$H_0$29f: The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical distributors/wholesalers and medical schemes.

1.7 RESEARCH METHODOLOGY

The following section outlines the research design, sampling, data collection and data analysis.

1.7.1 Research design

The study is designed as a formal study in the South African healthcare industry. The study consists of a literature review and an empirical study. The literature review provides insights into the field of entrepreneurial marketing, and identifies relevant constructs and concepts that are used to formulate the conceptual model of market-driving ability in corporate entrepreneurship.

The empirical study considers the conceptual framework which consists of measures of market-driving as well as firm-internal influencing factors, moderators and outcomes of market-driving ability. The conceptual framework is transformed into a statistical model. The generated data give information about the measure of market driving. Furthermore, firm-internal factors that influence market-driving ability are determined. Moderating effects on the relationship between firm-internal factors and market-driving ability are identified. Finally, the influence of market-driving ability on outcomes parameters is established.

1.7.2 Sampling

The target population for this study is organisations in the South African healthcare industry, specifically pharmaceutical manufacturers, medical device manufacturers, pharmaceutical distributors/wholesalers and open medical schemes. The respondents need to be in junior, middle or top management positions in their organisation.

The study uses a non-probability sample employing purposive sampling and snowball sampling. Non-probability sampling and specifically snowball sampling is useful in research situations where respondents are difficult to identify and contact (Babbie, 2010:193; Cooper & Schindler, 2008:397-399).

1.7.3 Data collection

The data for the literature study were gathered from books, journals and reports. Electronic databases which provide access to full text articles in electronic format were used (Bryman & Bell, 2007:107-108).

The empirical data were collected using a fully structured questionnaire which was administered telephonically. Respondents were guaranteed anonymity and their responses were treated as confidential.

The measuring instrument captures the constructs and concepts outlined in the conceptual framework. The following independent constructs are used in the study: Corporate entrepreneurial management is measured as a formative construct which consists of three concepts: risk-taking, management support and organisational structure. Entrepreneurial capital is measured as a reflective construct consisting of human, social and financial capital. Strategic orientation is measured as a formative construct consisting of information generation, information dissemination, interfunctional coordination and innovation intensity. Entrepreneurial behaviour is measured as a formative construct comprising proactiveness and responsiveness to information.

The dependent construct in the model is market-driving ability. Market-driving ability represents the structural part of the model, which is influenced by the independent constructs. Market driving represents the measurement part and considers activities relating to market sensing, influencing customer preferences and alliance formation. The impact of market-driving ability on two reflective outcomes parameters is determined. The outcomes parameters are represented by firm performance and relative competitive strength.

1.7.4 Data analysis

The study uses a structural equation modelling approach. The aim of structural equation modelling is to explain the structure among latent variables, which are measured by observed variables (Diamantopoulos, 1994:105). The advantage of

structural equation modelling over first-generation techniques such as principal component analysis, discriminant analysis or multiple regression is the greater flexibility between data and theory. Relationships can be modelled between multiple independent and multiple dependent variables; latent variables can be used and measurement errors considered, and theoretical assumptions can be tested against empirical data (Chin, 1998:297; Chin & Newsted, 1999:308).

Structural equation modelling comprises two approaches. A covariance-based approach focuses on the theory confirmation aspect, whereas a partial least squares approach is useful in situations where theory is not well developed (Chin, 1998:296; Diamantopoulos, 1994:106; Jöreskog & Wold, 1982:270; Rigdon, 1998:260).

The specifics of the two approaches and the reasoning for using a partial least squares approach will be outlined in detail in chapter five.

1.8 IMPORTANCE AND BENEFITS OF THE STUDY

The research contributes to science and management practice in various ways.

The study provides a reliable and valid measurement for market driving and demonstrates the impact of firm-internal influencing factors on market-driving ability. Future researchers could benefit from the study, as it provides a basis for further research on measurement properties and influencing factors.

The findings of the study could assist managers in the South African healthcare industry with the analysis of their current market-driving activities. Furthermore, the study outlines the firm-internal factors that influence market-driving ability the most. Managers who want to pursue a more market-driving approach within selected business units or within the overall organisation can reflect on their strategic orientation, their entrepreneurial behaviour and the entrepreneurial capital. These areas can be assessed in order to identify areas for improvement. Finally, the study could help managers to realise that a market-driving ability positively influences the firm’s performance and its relative competitive strength.

1.9 OUTLINE OF THE STUDY

The study starts with a literature review of the fields of entrepreneurship, corporate entrepreneurship, marketing and entrepreneurial marketing. Based on the findings from the literature review a conceptual model of market-driving ability is presented, which is transferred into a statistical model for testing the specified hypotheses. The research methodology is outlined, findings are presented and conclusions and recommendations are given.

Chapter 1: Introduction

Chapter one gives an overview of the study.

Chapter 2: Entrepreneurial marketing

Chapter two gives a literature review on the field of entrepreneurship, corporate entrepreneurship and marketing. It discusses the overlaps between the fields of research which resulted in research at the interface of entrepreneurship and marketing, which is termed “entrepreneurial marketing”. It outlines the concepts and frameworks of entrepreneurial marketing. Lastly, it describes the core elements of an entrepreneurial marketing approach: entrepreneurial and market orientation. The antecedents and consequences of these two approaches are discussed.

Chapter 3: Entrepreneurship and marketing: value creation as the link

Chapter three further describes the field of entrepreneurial marketing. The difference between a market-driven and a market-driving approach is outlined. This is followed by a selected number of studies that investigate market-driving activities. Based on these studies, the conceptual model of market-driving ability in corporate entrepreneurship is developed. The core elements of the model, its influencing factors and consequences are described.

Chapter 4: Developing a statistical model of market-driving ability in corporate entrepreneurship

Chapter four addresses the various measuring instruments that have been used to assess entrepreneurial and market orientation. Next, it presents a literature review on statistical modelling. In a final step the conceptual model developed in chapter three is operationalised for statistical testing.

Chapter 5: Research design and methodology of the study

Chapter five outlines the research problem, the research objectives, hypotheses and research methodology. The research methodology addresses the research design, sampling, data collection and data analysis. The data analysis is conducted with structural equation modelling. A detailed description of the approach followed in this study is given.

Chapter 6: Data analysis and findings

Chapter six presents the research findings. First, a descriptive analysis of biographical information is given. Second, the results of the data analysis with partial-least squares path modelling is presented for the measurement and the structural models.

Chapter 7: Summary, conclusions and recommendations

Chapter seven reflects on the theory of market driving and puts it into perspective with the findings of this study. Contributions to science as well as directions for future research are outlined. Managerial implications and limitations of the study are discussed.

1.10 REFERENCING TECHNIQUE

The Harvard referencing technique is used in this study. Guidelines on citation by the Faculty of Economic and Management Science, Department of Business Management, University of Pretoria, are followed (Kotzé, 2006).

1.11 ABBREVIATIONS

ADF	Asymptotically distribution free
AGFI	Adjusted goodness-of-fit
ALL	Alliance formation
AVE	Average variance extracted
BE	Entrepreneurial behaviour
CA	Entrepreneurial capital
CBSEM	Covariance-based structural equation modelling
CE	Corporate entrepreneurial management
CEAI	Corporate entrepreneurship assessment instrument
CFI	Comparative fit index
COMP	Relative competitive strength
COO	Interfunctional coordination
CUST	Customer preferences
DIS	Information dissemination
EMO	Extended market orientation scale
ENTRESCALE	Entrepreneurial orientation scale
FIN	Financial capital
f^2	Effect size
GEN	Information generation
GFI	Goodness-of-fit index
GLS	Generalised least squares
HUM	Human capital
IAI	Intrapreneurial assessment instrument
INN	Innovation intensity
LISREL	Linear structural relationships software
MARKOR	Market orientation scale by Kohli *et al*. (1993)

MD	Market driving
MD-ability	Market-driving ability
MGT	Management support
MOPRO	Proactive market orientation scale
MORTN	Market orientation scale by Deshpandé and Farley (1998)
ML	Maximum-likelihood
PERF	Firm performance
PLS	Partial least squares
PLS-MGA	Partial least squares multiple group analysis
PLS-PM	Partial least squares path modelling
PRO	Proactiveness
Q^2	Stone-Geisser test
RESP	Responsiveness to information
RISK	Risk-taking
RMSEA	Root mean square error of approximation
RMSR	Root mean squared residual
R^2	Coefficient of determination
SEM	Structural equation modelling
SENS	Market sensing
SMEs	Small and medium enterprises
SO	Strategic orientation
SOC	Social capital
SSI	Social skills inventory
STRU	Organisational structure
ULS	Unweighted least squares
VIF	Variance inflation factor
WLS	Weighted least squares
ZAR	South African Rand
4P	Marketing mix described by product, price, place, promotion
χ^2	Chi-square statistic

CHAPTER 2:
ENTREPRENEURIAL MARKETING

2.1 INTRODUCTION

The purpose of this chapter is to give an overview of the field of entrepreneurial marketing.
The chapter will first present the development of the field of entrepreneurship, corporate entrepreneurship, marketing and entrepreneurial marketing.

Second, concepts and frameworks used in entrepreneurial marketing research will be presented. The core dimensions are represented by an entrepreneurial and a market orientation that occur in organisations. The constructs will be conceptually defined and their antecedents and consequences will be outlined.

2.2 ENTREPRENEURSHIP AND MARKETING: HISTORY AND DEFINITION

The following paragraphs outline the development of entrepreneurship and marketing. Definitions of both disciplines are outlined.

2.2.1 Entrepreneurship

The study of entrepreneurship developed within the field of economics with the writings of Cantillon (in Filion, 1998:2) and Say (in Filion, 1998:2). Cantillon developed a first concept of the entrepreneurial function. Schumpeter (in Filion, 1998:3) linked entrepreneurs with innovation and economic development. McClelland (in Filion, 1998:5), one of the major contributors to the behavioural aspect of entrepreneurship, tried to uncover the characteristics of entrepreneurs (Filion, 1998:2-7).

The field of entrepreneurship drew increased attention with the publication of the first encyclopaedia and an annual conference held by the Babson College in the 1980s

(Filion, 1998:7). Major changes in worldwide society in the 1970s and 1980s, characterised among others by the oil crisis and economic recession, further developed the field. These changes led to uncertainty in society, from which innovation and entrepreneurship emerged as major concepts (Cornelius, Landström & Persson, 2006:375).

Various approaches have been taken to describing the emergence of the field of entrepreneurship and its most influential contributors.

Kirby (2003:12-16) analyses the field from a political-economic perspective, which describes the different schools of thought according to the country of origin of their most prominent authors. A further classification is made regarding the time dimension of these contributions. The classical school covers contributions made before the latter part of the 19th century, whereas the neo-classical school presents contributions after 1900. The classical economics schools consist of the American School, the Austrian School, the British School, the French School and the German School. The neo-classical economics school includes contributions made by Marshall, Knight, Van Mises and Schumpeter.

Kuratko and Hodgetts (1998:36-40) analyse six different schools of thought which can be classified into the macro and the micro views of entrepreneurship. The macro view includes perspectives of the external environment that cannot be controlled by the entrepreneur, and consists of three different schools. The micro view, on the other hand, examines factors that are specific to entrepreneurship and can be controlled by the entrepreneur.

The three schools under the macro view are the Environmental School, the Financial/Capital School and the Displacement School (Kuratko & Hodgetts, 1998:37-39).

The Environmental School argues that the socio-political environment influences the development of entrepreneurs. For example, if a person experiences positive feedback from family and friends, the desire to become an entrepreneur will grow (Kuratko & Hodgetts, 1998:36-37).

The Financial/Capital School views entrepreneurship from a financial management perspective. The entire focus is placed on seeking capital for the entrepreneurial venture (Kuratko & Hodgetts, 1998:37).

The Displacement School argues that people will only pursue an entrepreneurial venture if they have no other alternatives. Political displacement describes situations in which governmental regulations limit certain industries in their scope and thus individuals are forced to seek and create a business in other industries. Cultural displacement considers social groups that are excluded from certain professions due to their religion, sex, ethnic background and the like (e.g. caste system in India). Lastly, economic displacement considers job loss and recessions as initiating factors for entrepreneurship. It is noted that the development of entrepreneurship depends on understanding these factors and designing strategies to overcome hurdles (Kuratko & Hodgetts, 1998:37-40).

Cunningham and Lischeron (1991:56) analysed six different schools which have been described as the micro view by Kuratko and Hodgetts (1998:40). These schools of thought consist of the Great Person School, the Psychological Characteristics School, the Classical School, the Management School, the Leadership School and the Intrapreneurship School (Cunningham & Lischeron, 1991:47).

The Great Person School believes that entrepreneurs are born. They are characterised by, among other qualities, high self-esteem, energy, vision and physical attractiveness. Various biographies about charismatic entrepreneurs have nurtured this belief in the past. However, it is recognised that traits do not entirely describe the entrepreneurial phenomenon (Cunningham & Lischeron, 1991:46,48).

The Psychological Characteristics School believes that entrepreneurs have unique values and attitudes such as honesty, duty, responsibility, ethical behaviour, risk-taking propensity and the need for achievement. It is believed that people who possess these characteristics are more likely to perform in entrepreneurial endeavours. The most prominent authors of this school are Mill, Cantillion and McClelland. Mill and Cantillion argue that risk-taking distinguishes the entrepreneur from other people. McClelland, on the other hand, considers the higher need for

achievement of entrepreneurs as a distinguishing factor (Cunningham & Lischeron, 1991:48-50).

The Classical School believes that innovation and creativity are key factors. Furthermore, actions such as creating opportunities are most important. The most prominent leader of this school is Schumpeter, who argues that innovation lies at the heart of entrepreneurship (Cunningham & Lischeron, 1991:50-51).

The Management School believes that entrepreneurship can be taught and that functions such as planning, organising, coordinating and budgeting are important to managing the entrepreneurial venture. The failure of many entrepreneurial ventures justifies the training in central functions such as financing and marketing (Cunningham & Lischeron, 1991:51-52).

The Leadership School claims that the entrepreneur is a people leader and a manager. The required skills are setting clear goals, mentoring, and creating opportunities for people to accomplish tasks (Cunningham & Lischeron, 1991:52-53).

The Intrapreneurship School evolved due to a lack of innovation in existing organisations. Intrapreneuring largely depends on the management of the organisation, whether or not an opportunity is pursued, and whether people have the qualifications and are given the freedom to exploit opportunities. Furthermore, the team aspect needs to be strengthened in the process (Cunningham & Lischeron, 1991:53-54).

The different schools are used to describe entrepreneurial activity. However, no one school can claim exclusive prominence. Depending on the research question, different approaches are useful. In order to understand the entrepreneurs and their ventures it is important to consider different aspects of the presented schools of thought (Cunningham & Lischeron, 1991:57-58).

The following table summarises these schools of thought according to the structure presented by Kuratko and Hodgetts (1998:36-42) and describes their main aspects.

In addition, the table includes the schools of thought presented by Cunningham and Lischeron (1991:47).

TABLE 2.1: Entrepreneurship schools of thought

Schools of thought described by Kuratko & Hodgetts (1998)	Description	Schools of thought described by Cunningham & Lischeron (1991)
Macro view		
The environmental school of thought	Socio-political factors influence the development of entrepreneurs	
The financial/capital school of thought	Based on capital-seeking process. Views the entrepreneurial venture from a financial management perspective	
The displacement school of thought	Describes external forces that may influence the development of entrepreneurship, e.g. job losses and difficult economic times can increase or decrease venture development	
Micro view		
Entrepreneurial trait school of thought	Description of successful entrepreneurs based on their characteristics, e.g. achievement, creativity, determination	Great person school; Psychological characteristics school,
The venture opportunity school of thought	Focus is on opportunity recognition, the development of concepts, implementation of the venture at the right time in the right market.	Classical school; Management school, Leadership school
The strategic formulation school of thought	Focusing on strategic planning of the venture	Intrapreneurship school

Sources: Kuratko and Hodgetts (1998); Cunningham and Lischeron (1991)

Besides being analysed from a content perspective, entrepreneurship can also be described as a process that produces entrepreneurial results (Churchill & Muzyka, 1994:16).

The entrepreneurial process as described by Hisrich *et al*. (2008:9) consists of four phases: the identification and evaluation phase of the opportunity, the development of the business plan, the determination of the required resources and finally the management of the firm.

The opportunity identification phase considers the value of the innovation, the risks and return, and its uniqueness or competitive advantage. Furthermore, it must consider the skills and goals of the entrepreneur. A business plan is then developed in order to exploit the opportunity. The third step is to determine the required resources and acquire the needed resources in time. Finally, the enterprise must be managed, which requires the implementation of a management style, structure and control systems (Hisrich *et al.,* 2008:12-13).

Researchers have defined entrepreneurship in various ways. Gartner (1990:15,27) identified major viewpoints from a series of questionnaires which were administered to academic researchers, politicians and business leaders. First, all participants considered the creation of an organisation as an act of entrepreneurship. A distinction between two groups could be identified in a cluster analysis. The first group focused on characteristics of entrepreneurship, such as growth, innovation and uniqueness. For these respondents a situation was considered entrepreneurial if innovation, growth or uniqueness was involved. The second group related entrepreneurship to outcomes parameters. This group considered a situation entrepreneurial if value could be created and some positive outcome could be found.

Stevenson and Jarillo (1990:18-21) approached their research on entrepreneurship from a similar perspective. First, they analysed what happens when entrepreneurs act, which is related to the results that are achieved. The second aspect covers why entrepreneurs act and includes characteristics of individuals. Third, they considered how entrepreneurs act: what they do.

Churchill and Muzyka (1994:16) define entrepreneurship as “A process that takes place in different environments and settings that causes changes in the economic system through innovations brought about by individuals who generate or respond to economic opportunities that create value for both these individuals and society.”

Stevenson, Roberts and Grousbeck (in Stevenson & Jarillo, 1990:23) state that “Entrepreneurship is a process by which individuals – either on their own or inside organisations – pursue opportunities without regard to the resources they currently control.”

Ireland *et al*. (2001:51) apply the following definition, which has also been used by Morris (1998:16) and Morris *et al*. (2008:10). Entrepreneurship is “… a context-dependent social process through which individuals and teams create wealth by bringing together unique packages of resources to exploit marketplace opportunities”. The key aspects of the definition are opportunity perception and pursuit and a belief in success (Stevenson & Jarillo-Mossi, 1986:12).

For the purpose of this study, the following definition of entrepreneurship is applied:

“Entrepreneurship is the process through which individuals and teams create value by bringing together unique packages of resource inputs to exploit opportunities in the environment. It can occur in any organisational context and results in a variety of possible outcomes, including new ventures, products, services, processes, markets, and technologies.” (Morris, 1998:16).

2.2.2. Corporate entrepreneurship

In the 1980s, corporate entrepreneurship emerged as a means to emphasising innovation, risk-taking and proactiveness in large organisations in order to increase financial performance (Zahra, 1991:260).

The need for corporate entrepreneurship arises from changes in the firm’s external environment.

Firms in today's businesses are confronted by an ever-changing external environment. Changes occur in various environments, such as the economic, technological, competitive, legal and regulatory, labour, resource, customer and global environment. In order to handle those changes, firms initiate internal strategic transformations such as downsizing, increasing activities in new product development, or diversification to achieve a competitive advantage (Hisrich *et al.,* 2008:69; Kuratko & Morris, 2003:23-24; Morris *et al*., 2008:4-7).

There are numerous definitions of corporate entrepreneurship. Zahra (1991:260-261) states that there is no universal definition. Researchers use different terms such as intrapreneurship, internal corporate entrepreneurship, corporate venturing, and internal corporate venture to describe new business creation.

Vesper (1984:294-296,303) describes three different types of corporate venturing, which can also appear together. First, new strategic direction refers to newness with regard to products, markets or technology. Second, initiative from below describes employee innovations without formal procedures or permission. The third type is autonomous business unit creation, which allows innovation activities to occur outside of the rules and regulations of the organisation.

Burgelman (1984:154) describes corporate entrepreneurship as an entrepreneurial activity that represents an integral part of the strategic process.

Guth and Ginsberg (1990:5-6) state that corporate entrepreneurship describes two types of phenomena: first, new business creation within the organisation, and second, an organisational strategic renewal that involves value creation through new combinations of resources. Zahra (1991:260-261) concurs that the process of corporate entrepreneurship also involves the creation of a new business within an established firm to improve profitability and enhance the firm's competitive position, or the strategic renewal of existing business.

Similarly, Sharma and Chrisman (1999:14-16) provide a comprehensive analysis of different terms and definitions for corporate entrepreneurship. The various definitions and conceptualisations can be summarised in two types of corporate

entrepreneurship that may involve innovation. The first type is corporate venturing, which refers to the creation of a new business within the organisation. The second type is strategic renewal, which refers to entrepreneurial efforts that result in changes in the organisation's business, strategy or structure (Sharma & Chrisman, 1999:18-19).

Miller (1983:770) argues that firms get more complex when they grow; therefore there is a continuous need to renew themselves, innovate and take risks in order to pursue new opportunities. Burgelman (1984:164) argues that organisations that wish to maintain their growth need to exploit all their resources, find new resource combinations and pursue new opportunities. Stevenson and Jarillo-Mossi (1986:23) state that as firms grow they need to preserve entrepreneurship, which enables them to change.

The presented studies consider various aspects of corporate entrepreneurship. The prevailing aspects of corporate entrepreneurship focus on internal renewal strategies and the creation of a new business in order to achieve competitive advantage or respond to environmental changes (Guth & Ginsberg, 1990:5-6; Hisrich *et al.,* 2008:69; Kuratko & Morris, 2003:23-24; Morris *et al*., 2008:4-7; Zahra, 1991:260-261).

Corporate entrepreneurship is considered as a multidimensional construct that provides a means for revitalising established firms. This is accomplished through firm activities relating to innovation, risk-taking and proactiveness. Furthermore, the three dimensions of environment, structure and strategy have an influence on the level of entrepreneurship (Miller, 1983:771; Zahra & Covin, 1995:44).

2.2.3. Marketing

Like entrepreneurship, marketing and the marketing process can also be described according to different schools of thought.

Various schools of thought in marketing developed in the early 1900s from which more contemporary schools of thought evolved in the 1960s (Sheth *et al*., 1988:1).

Sheth *et al.* (1988:19) describe twelve schools of thought that have emerged since the 1900s. These can be classified according to interactive versus non-interactive dimensions, and economic versus non-economic perspectives.

The non-interactive schools of thought postulate that only the producer of a product has an impact on the buyer, so persuasion is the main focus. However, the interactive schools of thought argue that relations and effects are involved in the marketing process (Sheth *et al*., 1988:20). The economic perspective focuses on efficiency and profits of the marketing system. On the other hand, the non-economic schools argue that economic analysis alone cannot capture why stakeholders behave the way they do (Sheth *et al*., 1988:22).

The following table presents an overview of the twelve schools of thought.

TABLE 2.2: Marketing schools of thought

Schools of Thought	Description
Non-interactive & Economic perspective	
Commodity School	Concentrates on the physical characteristics of products and buying habits for different categories of products
Functional school	Focuses on activities that must be performed during the marketing process
Regional school	Is concerned with shopping patterns of consumers
Interactive & Economic perspective	
Institutional school	Analyses organisations involved in the marketing process
Functionalist school	Considers exchange processes and the heterogeneity of demand and supply
Managerial school	Focuses on different concepts: marketing mix, product life cycle, market segmentation
Non-interactive & Non-economic perspective	
Buyer behaviour school	Focuses on buyer of products
Macromarketing school	Analyses uncontrollable environmental factors such as forces of technology, political regulation, societal trends and competition
Activist school	Analyses the effects marketing has on the environment with topics like product safety, consumer satisfaction, disadvantaged consumers, social responsibility
Interactive & Non-economic perspective	
Organisational dynamics school	Focus is on interorganisational behaviour for understanding the marketing process. Based on social and psychological concepts rather than economic.
Systems school	Has a holistic view on theory and research, social systems, marketing information systems
Social exchange school	Holds that marketing should focus not only on business transactions but also on social transactions, exchange concept

Source: Sheth *et al.* (1988:23-28)

In today's marketing management, perspectives from each school are applied in the marketing process (Kotler & Armstrong, 2010:29).

The marketing process is described as "… the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return" (Kotler & Armstrong, 2010:29).

As a first step, firms need to understand the marketplace and customer needs; secondly a customer-driven marketing strategy needs to be designed which is followed by the third step to construct a marketing programme that delivers superior value. The fourth step is to build profitable relationships with customers and finally capture value from the customer to create profits and customer equity (Kotler & Armstrong, 2010:29).

Kotler and Armstrong (2010:30-31) outline five concepts that need to be known if one is to understand the market. First, customer needs, wants and demands need to be known so that appropriate market offerings can be designed. Market offerings represent the second concept, and include products, services, information or experience that are offered to satisfy the need. Third, customer value and satisfaction are important in managing customer relationships. Fourth, exchange relationships consider obtaining objects from someone by offering something in return. Maintaining relationships with the target audience is acquired by delivering superior customer value. The last concept relates to markets. The market is considered as a set of actual and potential buyers of products or services (Kotler & Armstrong, 2010:30-31).

Once the market and its customers are understood, a customer-driven marketing strategy needs to be put in place. Marketing management is defined as "… the art and science of choosing target markets and building profitable relationships with them" (Kotler & Armstrong, 2010:32). Market segmentation and target marketing are considered to be important activities in this process (Kotler & Armstrong, 2010:32).

In a next step a value proposition must be chosen that describes how the firm will differentiate itself from competitors (Kotler & Armstrong, 2010:33).

Marketing management orientation refers to how marketing strategies are carried out. Five different concepts can be distinguished, such as the production concept, the product concept, the selling concept, the marketing concept and the societal marketing concept (Kotler & Armstrong, 2010:33-35).

The production concept considers that customers will buy products which are affordable; therefore the management focus is on improving efficiency in production and distribution. The product concept focus is on quality and performance of the products, with constant improvements. The selling concept refers to large-scale promotion efforts, as customers will buy only if they are exposed to aggressive selling. These three concepts exhibit major disadvantages, as they each only consider a very narrow perspective of customer desires. The marketing concept applies a “sense and respond” philosophy, where customer needs are assessed and the right products for the particular customer are identified. The societal marketing concept postulates that not only customers’ short-term wants should be satisfied; rather the impact on the whole society in the long term needs to be considered and balanced (Kotler & Armstrong, 2010:33-35).

Kotler (1972:49) presents a generic concept of marketing, stating that “Marketing is specifically concerned with how transactions are created, stimulated, facilitated and valued.”

Hunt (1991:1) states that “… marketing research attempts to explain, predict and understand marketing phenomena …”. Hunt (1991:2) draws a distinction between marketing research and market research. The latter addresses specific marketing problems of firms whereas marketing research tries to expand the knowledge base of marketing.

Hills and LaForge (1992:39) state that the marketing concept has specific relevance to new and growing firms. Furthermore, adopting a marketing orientation throughout the firm, which is characterised primarily by a customer orientation focus, is beneficial for achieving the firm’s goals.

The American Marketing Association revised its definition of marketing in 2007. The previous definition from 2004 stated that “Marketing is an organisational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organisation and its stakeholders.” (American Marketing Association, 2007).

The new definition, promulgated in 2007, says “Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.” (American Marketing Association, 2007).

Comparing the two definitions, the American Marketing Association (2007) notes that the new definition considers marketing as an activity rather than a function, and with a broader spectrum across the organisation. Further, the new definition emphasises the long-term value perspective of marketing (American Marketing Association, 2007).

While one of the primary perspectives of marketing used to be the study of consumer behaviour, strategic marketing has become more important in recent times. The reason for this move can be found in the fact that marketing has failed to adequately address the development of higher firm performance and long-term competitive advantage (Barrett *et al*., 2000:57; Sheth *et al.,* 1988:4). Strategic marketing considers a firm’s resources and tries to match them with environmental opportunities to achieve a competitive advantage (Sheth *et al.,* 1988:4).

Marketing theory can, like entrepreneurship theory, also be organised around different schools of thought which focus on different aspects of marketing. The presented literature describes marketing as a process that puts the customer at the centre of all activities. Firm-internal processes are organised around communicating and delivering the best value to the customer in order to achieve the firm’s goals (American Marketing Association, 2007; Hills & LaForge, 1992; Kotler & Armstrong, 2010; Sheth *et al.*,1988).

2.2.4 Entrepreneurial marketing

Research at the entrepreneurship/marketing interface started back in 1982 with a meeting led by Professor Gerald Hills at the University of Illinois in Chicago. Commonalities between the two fields of entrepreneurship and marketing were recognised, and a first conference was held in 1987 (Collinson, 2002:337).

Research at the entrepreneurship/marketing interface also developed in Europe, where a special interest group was formed in the United Kingdom. The first conference was held at the University of Glasgow in 1995 (Collinson, 2002:337).

There is a discourse between researchers in the fields of, entrepreneurship and marketing as to, whether entrepreneurship should be considered as a dimension within marketing or whether marketing should be pursued in a more entrepreneurial way.

The following paragraphs outline the different perspectives.

One perspective is that marketing should be a guiding process within new ventures and SMEs, as these are often characterised by a lack of capability in the marketing area to successfully bring their products to market (Hills, 1994:5; Hisrich, 1992:54).

Hills (1994:5) reports on a study that analysed venture capitalists' experience with entrepreneurs. It concluded that entrepreneurs lack marketing expertise and ventures could be prevented from failure if entrepreneurs applied certain marketing techniques such as a market analysis.

In the same vein, Hisrich (1992:54; 1994:132) emphasises the importance of marketing expertise in entrepreneurs. A lack of marketing expertise is expressed with regard to determining market size, producing sales forecasts and managing the business. Furthermore, entrepreneurs are often led by the feeling that their innovation is needed by everybody, so often products are over-engineered, which goes beyond the market needs.

Other researchers critically assess marketing's position and influence within the firm.

The marketing discipline has been criticised for applying too theoretical and narrow perspective on the market. Grönroos (1994:6-7) argues that the marketing mix, with its four "P's" (product, price, place, promotion), which has dominated marketing thought since the 1960s is too theoretical, as it was developed under a microeconomic view that assumed monopolistic competition. Rather than being exposed to a true market orientation that puts customers' needs first, marketing departments have been separated from other activities of the firm and have become managers of the 4P toolbox.

Morris *et al*. (2002:2) summarise the criticisms of contemporary marketing, stating that current marketing practice relies on rule-of-thumb practices, applies formula-based thinking, lacks accountability for expenditure, tends to imitate rather than innovate, and serves existing markets rather than creating new ones.

Researchers from both fields note that entrepreneurship and marketing can benefit from each other. Slater and Narver (1995:63) state that a market orientation is valuable as it collects and uses customer information in order to create value; however, in order to maximise the effectiveness of a market orientation one must complement it with an entrepreneurial spirit.

By describing differences and commonalities between entrepreneurship and marketing, researchers try to assess the interface.

Collinson (2002) and Collinson and Shaw (2001) take a market perspective and assess how one discipline can support the other under certain circumstances. Traditional marketing operates in a consistent environment where market conditions are clear and customer needs are satisfied. On the other hand, pure entrepreneurship operates in uncertain environments, where market conditions constantly change and customer needs are not yet clear. The overlaps between the two areas are twofold. First, if market conditions are continuous, entrepreneurship can help to identify unmet needs and identify opportunities. Second, in cases where

markets are discontinuous, entrepreneurship can help marketing to develop existing needs in a new environment (Collinson, 2002:338; Collinson & Shaw, 2001:761).

Similarly Davis *et al*. (1991:49) find that when environments become more turbulent, greater levels of entrepreneurship should be included in marketing efforts.

Hills and LaForge (1992:34) describe the interface of entrepreneurship and marketing with a focus on exchange and transactions.

Hisrich (1992:55-56; 1994:135-141) observes four areas where entrepreneurship and marketing interrelate. These areas are:

- *Time dimension.* For both processes, often more time is required than planned.
- *Size and structure of the organisation.* Entrepreneurial firms tend to have a flat structure, with informal networks. For product planning in the marketing discipline, new organisational structures are created to increase effectiveness in conceptualising new products/services.
- *Risk-taking and uncertainty*. Risk-taking for the entrepreneur involves the risk of starting the business and potential failure. The same can be said of new-product development as seven out of ten products fail in their first year. Therefore the focus is on setting up a marketing plan that decreases the potential for failure.
- *Change*. This dimension addresses the acceptance of change in the firm. The more change is accepted, the more innovativeness can occur. In addition, a more flexible organisation allows for faster response times and faster completion of tasks.

Stokes (2000:2-13) argues that entrepreneurial marketing is marketing carried out by entrepreneurs. The entrepreneurial marketing concept is basically characterised by three aspects. First, ideas and innovation are developed with an understanding of the market needs. Second, entrepreneurs approach the market bottom-up, which means that products are sold to a small customer base in the beginning and gradually transactions increase as resources and competencies increase. Finally,

entrepreneurial marketing relies on informal information generation through networks and personal contacts.

According to Collinson and Shaw (2001:761), entrepreneurship and marketing have key areas of interface:

- Both have a change focus.
- Both are opportunistic in nature.
- Both are innovative in their approach to management.

In the early stages entrepreneurial marketing was associated with activities that occur in small businesses and are characterised by unsophisticated tactics due to the small resource base at these firms. The focus of analysis was on the individual entrepreneur rather than the firm (Collinson & Shaw, 2001:762; Gilmore, 2010:12; Morris *et al.,* 2002:4).

Over time entrepreneurial marketing has been recognised to be an activity that can successfully be used in SMEs and also in large firms to achieve growth (Collinson & Shaw, 2001:762; Hills *et al*., 2008:99; Miles & Darroch, 2006:488; Miles & Darroch, 2008:46).

To date no consistent definition of entrepreneurial marketing has been established (Schindehutte *et al*., 2009:29). The following paragraphs present different perspectives that are discussed.

Gardner (1994:37) provides a general definition of an interface "… that area at which any two systems or disciplines share the same concepts, objectives, and goal-oriented behaviour". The entrepreneurship and marketing interface is described as "… that area where innovation is brought to market" (Gardner, 1994:37). Further, Gardner (1994:46,49) states that information is the most important aspect of the interface. Information generation and interpretation are key factors for the success of the entrepreneurial venture.

Shaw (1999:26) defines entrepreneurial marketing as "… the innovative or creative use of an organisation's resources for marketing purposes …". It is argued that

networks are strategic tools in this process and networking is a critical competency in firms.

According to Collinson and Shaw (2001:764) entrepreneurial marketing is characterised by a "… responsiveness to the marketplace, an ability to anticipate changes in customer demands, use of networks, use of relationships with buyers, suppliers and other stakeholders along the supply chain to identify information which is relevant to their success that must be regularly collected and understood".

Morris *et al.,* (2002:5) and Schindehutte *et al.,* (2009:29) state that entrepreneurial marketing is more than the examination of each of the individual disciplines and their roles in the respective other area. Entrepreneurial marketing is "… a central concept that integrates the two disciplines …". Entrepreneurial marketing is described as "… the proactive identification and exploitation of opportunities for acquiring and retaining profitable customers through innovative approaches to risk management resource leveraging and value creation".

Miles and Darroch (2006:488) define an entrepreneurial approach to marketing as one able to "… proactively leverage innovation and manage risks throughout the marketing process for creating, communicating and delivering value to the customer in ways that benefit the organisation and its stakeholders".

Hills *et al.* (2008:107) describe entrepreneurial marketing as behaviour that differs from traditional marketing in several ways "… strategic orientation, commitment to opportunities, opportunity recognition skills, commitment of resources, control of resources and management structure …".

The following table summarises the different definitions of entrepreneurial marketing and the main perspectives.

TABLE 2.3: Definitions of entrepreneurial marketing

Author, Year	Definition of entrepreneurial marketing	Main perspectives
Gardner, 1994	Innovation brought to market	- Information generation and interpretation
Shaw, 1999	Innovative or creative use of an organisation's resources for marketing purpose	- Networks
Collinson & Shaw, 2001	3 key areas of overlap: - Change focus - Opportunistic in nature - Innovative management approach	- Responsiveness to marketplace - Anticipate changes in customer demand - Use of networks to regularly collect information
Morris *et al.,* 2002; Schindehutte *et al.,* 2009	Central concept that integrates both disciplines	- Opportunity identification, exploitation - Innovative approach to risk management and resource leveraging
Miles & Darroch, 2006	Process	- Proactively leverage innovation - Manage risk - Create, communicate, deliver value
Hills *et al.,* 2008	Specific behaviour	- Strategic orientation - Commitment to opportunities - Opportunity recognition - Commitment of resources - Control of resources - Management structure

Sources: Collinson & Shaw (2001); Gardner (1994); Hills *et al.,* (2008); Miles & Darroch (2006); Morris *et al.,* (2002); Schindehutte *et al.,* (2009); Shaw (1999)

Carson (2010:8) states that a paradigm for the interface of entrepreneurship and marketing has not been developed yet, as the parameters, principles and frameworks belonging to the interface are still not clear. Carson (2010:9) adds that the most significant change in the past 10 years has been the growing influence of entrepreneurial constructs in the interface research. Carson (2010:9) argues that the dominance of entrepreneurship makes it almost impossible to find a definition/theory.

Collinson (2002:339) states that key research areas in the field of entrepreneurial marketing include entrepreneurial management, networking and areas linked to relationship development, resource and skill development for adopting an entrepreneurial style in marketing, creativity and opportunity identification.

In the same vein as Gartner (1990:27-28) argued 20 years ago that, when looking at a discipline that has no clear definition yet, it is important to explicitly state what is being investigated, the following definition of entrepreneurial marketing is put forward for the purpose of this study:
Entrepreneurial marketing is considered as a behaviour of organisations that is primarily reflected in an entrepreneurial and a market orientation.

From the discussion presented above it becomes evident that both disciplines entrepreneurship and marketing, have a strong ownership in the interface research.

The next section discusses the concepts and frameworks that have been applied to the research in entrepreneurial marketing, entrepreneurial orientation, corporate entrepreneurship and market orientation.

2.3. ENTREPRENEURIAL MARKETING: CONCEPTS AND FRAMEWORKS

Past researchers conceptualised entrepreneurial marketing as a framework, a process or a behavioural pattern. The following paragraphs outline selected studies and the different perspectives.

Hultman (1999:60-65) suggests a framework for entrepreneurial marketing in small and medium enterprises (SMEs) that consists of three parts. The first part includes

information generation of firms; the second part includes information implementation within the firm, and finally action taking towards the market. In SMEs few individuals dominate the decision-making process and hence their sense-making about the environment shapes the firm's behaviour. Information is continuously collected through direct interaction with customers, and entrepreneurs learn from experience. Where chances to serve the customer better are identified, they are implemented immediately. The process is less guided by formal planning procedures. Actions taken towards the market can be captured with the traditional marketing mix and a reputation within the market is created to achieve long-term relationships. However, the marketing-mix framework or the relationship-marketing framework on their own cannot create actions that create long-term customer relations. The entrepreneurial marketing approach must provide a combination of actions to create long-term value.

A process perspective has been applied by Hills and LaForge (1992), Hisrich (1994) and Miles and Darroch (2006).

Hills and LaForge (1992:34-35) consider the interface between the two disciplines to be a process that is characterised by exchange and transactions. The process starts with the identification of an idea, then innovation and exploitation of opportunities which can be referred to a market opportunity analysis in the marketing discipline. The business plan consists of a market feasibility study and a marketing strategy. In the implementation stage, team building becomes important. In the growth stage, initial sales need to be generated and a constant analysis performed comparing customer needs relative to product and service offerings.

Hisrich (1994:135) compares the marketing and entrepreneurial processes and finds similarities between both. First, both processes involve opportunity identification. Second, both need to develop a business plan. The entrepreneurial process then continues with resource requirement assessment and managing the enterprise. The new product development process finishes with the product development and test marketing stage before the process emerges into the product life cycle.

Miles and Darroch (2006:486-488) provide a process perspective for entrepreneurial marketing that can be used by large firms. The process refers to the establishment

and constant renewal of the competitive advantage of the firm. The process starts with the discovery or creation of a radical innovation, followed by an assessment of the opportunity and its ability to create a competitive advantage. The third step is to leverage and exploit the opportunity to create the competitive advantage. Next, competitors will try to diminish the competitive advantage; hence firms must either accept decreasing results or renew the competitive position. Renewing the firm's competitive position can be achieved through exploitation of resources by market-creating innovation.

The elements that are needed for entrepreneurial marketing are customer intensity, value creation, proactive behaviour and risk-management (Miles & Darroch, 2006:486-488).

Morris and Paul (1987) and Davis *et al*. (1991) apply a behavioural firm perspective on entrepreneurial marketing.

Morris and Paul (1987:248,254-257) state that in today's complex and turbulent environments firms must have a strategic response. It is argued that firms that have an entrepreneurial orientation, (i.e. engage in innovativeness, risk taking and proactiveness) are also more marketing orientated. A marketing orientation refers to applying a customer orientation, as well as having structures and policies for marketing in place. Furthermore, the skills of people working in marketing need to reflect the entrepreneurial dimensions.

Davis *et al.* (1991:44-49) investigate the relationships between environmental dynamics, corporate entrepreneurship and marketing. They argue that marketing and entrepreneurship are part of the same business philosophy, where value creation is the link between the two. Their study with large organisations found that the more uncertain the environment, the more entrepreneurial and market-oriented firms react. That means that the firms invest more in information collection from customers and internal activities are more targeted towards the market. Furthermore, more proactive, innovative and risk-taking behaviour is shown when firms are exposed to a more dynamic environment.

Shaw (1999:24,30-33) argues that networking is a core activity within entrepreneurial marketing. It is observed that the analysis of network activities has primarily focused on small entrepreneurial firms, the main reason being that network relationships can be identified more easily in small firms than larger ones. In an exploratory study Shaw (1999:30-33) found that firms' networking content included information about current and potential customers to widen the customer base. Further, entrepreneurs' relationships with family and friends provided them with information and advice. Networking as an activity was targeted around acquiring new business as well as achieving repeat business, especially with key clients.

Morris *et al*. (2002:5) describe entrepreneurial marketing as "… a central concept that integrates the two disciplines of marketing and entrepreneurship …". The model of entrepreneurial marketing postulated by Morris *et al*. (2002:12) consists of several antecedents and outcomes. The antecedents consist of external environmental factors and internal organisational factors. The internal factors are described as dimensions that capture the entrepreneurial orientation, the market orientation and organisational climate variables of the firm. The outcomes affect firm performance with regard to financial and non-financial measures.

The following table summarises the perspectives on entrepreneurial marketing.

TABLE 2.4: Perspectives on entrepreneurial marketing

Author, Year (sorted by year)	**Perspectives on entrepreneurial marketing**
Morris & Paul, 1987	*Behavioural firm perspective:* - firms must have entrepreneurial orientation (risk-taking, innovativeness, proactiveness) as well as - market orientation (customer orientation)
Davis *et al*., 1991	*Behavioural firm perspective:* - more entrepreneurial and market oriented when exposed to dynamic environment
Hills & LaForge, 1992	*Process:* - idea identification, exploitation of opportunity - setting up of business plan - implementation - growth
Hisrich, 1994	*Process:* - idea identification (product planning) - development of a business plan - assessing resources required - managing the business (product life cycle)
Shaw, 1999	*Activities:* - networking when applied in an entrepreneurial way can have an impact on marketing effectiveness
Morris *et al*., 2002	*Model:* - consisting of antecedents and outcomes of entrepreneurial marketing
Miles & Darroch, 2006	*Process:* - discovery or creation of a radical innovation - opportunity evaluation to achieve a competitive advantage - exploiting of opportunity - constant renewal of competitive position by exploitation of resource

Sources: Davis *et al*. (1991); Hills & LaForge (1992); Hisrich (1994); Miles & Darroch (2006); Morris & Paul (1987); Morris *et al*. (2002); Shaw (1999)

Summarising the perspectives presented above, it is notable that the firms' goal is to achieve a competitive advantage and firm performance by delivering superior value to the customer. It is argued that an entrepreneurial marketing approach is suitable to achieve this target. By serving current markets as well as creating new customers and markets through innovation, a competitive advantage is created and renewed.

The model presented by Morris *et al.* (2002) provides the most holistic approach to entrepreneurial marketing so far. Behavioural aspects as processes and activities are outlined, which take into consideration the aspects also described by other researchers. Therefore the model described by Morris *et al.* (2002) will be used as a guide for the further research in this study.

The core elements in the entrepreneurial marketing construct are an entrepreneurial and a market orientation of the firm. Following chapters outline these central dimensions within a corporate environment.

2.3.1 Entrepreneurial orientation

The following paragraphs outline the dimensions of an entrepreneurial orientation, its antecedents and consequences.

2.3.1.1 Dimensions of entrepreneurial orientation

Lumpkin and Dess (1996:136) draw a distinction between entrepreneurship and an entrepreneurial orientation. Entrepreneurship is characterised by a new entry, which is described as launching a new venture, either by starting a new firm or internal corporate venturing. An entrepreneurial orientation is described as the processes, practices and activities that are needed to perform the new entry.

Lumpkin and Dess (1996:136-137,150-160) suggest that an entrepreneurial orientation is a multidimensional construct consisting of five dimensions. These dimensions are autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness. It is noted that they can occur in different combinations and may

vary independently of each other. The quality of these dimensions to predict venture success also depends on environmental and organisational variables.

The following paragraphs describe the entrepreneurial dimensions in more detail.

Autonomy in an organisational context refers to independent decision making of individuals outside of the organisational boundaries framework (Lumpkin & Dess, 1996:140). In order to promote corporate entrepreneurship, independent decision-making behaviour must be supported. This can occur in a two-stage process, which is characterised by project definition by all in the organisation and support provided by experienced persons in the organisation (Lumpkin & Dess, 1996:142).

Innovativeness refers to a willingness to support new ideas that may lead to new products, services, technology or processes (Lumpkin & Dess, 1996:142; Morris, 1998:38). Innovations may take several forms, from incremental to radical (Lumpkin & Dess, 1996:143; Morris, 1998:38).

Risk-taking considers an approach to pursuing opportunities that could potentially result in a loss (Lumpkin & Dess, 1996:144; Morris, 1998:38). In a strategy context it refers to three different types of risk-taking. The first type considers that every venture entails some kind of risk, be it personal, social, psychological or financial (Lumpkin & Dess, 1996:144). The second type is characterised by committing large amounts of resources to the venture (Lumpkin & Dess, 1996:144; Miller & Friesen, 1978:923). The third type of risk-taking refers to heavy debt-making of the firm in order to pursue the venture (Lumpkin & Dess, 1996:144). Khandwalla (1976/77:23,40) considers risk-taking as an interaction of management with the external environment which is reflected by: management's activities in searching for new opportunities; its emphasis on research and development; approaches to decision making; and its overall philosophy towards competitors.

Proactiveness has been defined in various ways in past research. Proactiveness has been associated with a forward-looking perspective. Miller and Friesen (1978:923 in Lumpkin & Dess, 1996:146) consider proactiveness as an action that needs to shape the environment by implementing new products, services and technologies. Lumpkin

and Dess (1996:146) argue that proactiveness has also been used to describe fast-moving behaviour of the firm, referring to being the quickest to innovate and the first to market. Morris (1998:41) describes proactiveness in a similar way, as an action orientation, referring to Miller's (1987) conception of proactiveness. Miller (1987:10) noted that proactive firms act rather than react to their environments. Morris (1998:41) states that proactiveness is concerned with the implementation of the entrepreneurial concept. Venkatraman (1989:949 in Lumpkin & Dess, 1996:146) and Morris (1998:41) describe proactiveness as the seeking for new opportunities that may or may not relate to the present line of products and services. Therefore a proactive firm is considered to be an initiator rather than a follower of developments.

Competitive aggressiveness refers to direct competition in the market. It may take several forms, such as challenging competitors in different areas, responding to competitors with unusual means or doing things differently. The main target is to outperform competitors with regard to market share, turnover or profit (Lumpkin & Dess, 1996:149). Venkatraman (1989:948) associates aggressiveness with the resource allocation practices of the firm in order to outperform competitors. Firms may use cost-cutting measures or product innovation in order to improve their market position relative to competitors. Covin and Covin (1990:36) describe competitive aggressiveness as a firm's willingness to dominate competitors through proactive and innovative behaviour. Firms with a competitive aggressiveness posture are the first ones to introduce new products, technologies and operations and to try to eliminate competition.

As outlined in the previous paragraphs, *entrepreneurial orientation* consists of different dimensions, which can occur in various degrees and amounts. Morris (1998:42) applies the concept of entrepreneurial intensity in order to describe a firm's behaviour towards entrepreneurship. Entrepreneurial intensity is considered as a linear combination of the degree of entrepreneurship, which is represented by the extent of innovative, risky and proactive firm behaviour and the amount of entrepreneurship, which is characterised by the frequency of entrepreneurial events.

Morris and Sexton (1996:5,10) specifically address the degree and amount of entrepreneurship that occurs within organisations. It is found that the construct of

entrepreneurial intensity positively influences firm performance, with weights of 70:30 and 80:20 (degree of entrepreneurship in proportion to the amount).

Several researchers have investigated whether the entrepreneurial orientation construct should be considered as a unidimensional or multidimensional construct. Reviewing the respective literature finds support for both approaches, which are outlined below.

Miller (1983:779-780) conceptualised the three entrepreneurial dimensions of innovation, risk-taking and proactiveness as a unidimensional concept, arguing that firms need to exhibit a certain behaviour on all three dimensions in order to be considered entrepreneurial.

Rauch *et al*. (2009:2-3) performed a meta-analysis of 51 studies investigating the entrepreneurial orientation of firms, consisting of risk-taking, innovation and proactiveness, with regard to performance. The majority of studies considered entrepreneurial orientation as a unidimensional construct, building a sum of all three dimensions. This perspective suggests that only firms that score high on all three dimensions are considered entrepreneurial (Chadwick, Barnett & Dwyer, 2008:69).

Various research has revealed, however, that not all of these dimensions need to be present at the same time in order to successfully pursue entrepreneurship. Although all five dimensions are important in the entrepreneurial orientation construct, the extent of their presence is also influenced by moderating variables such as industry or business environment and also firm-internal factors (Lumpkin & Dess, 1996:137,150). Furthermore, Lumpkin and Dess (1996:150-151) suggest that all five dimensions can vary independently of each other.

Lumpkin and Dess (2001:445-446) analysed the relationship between proactiveness, competitive aggressiveness and performance. It was found that proactiveness and competitive aggressiveness are distinct dimensions and also tend to vary independently. The two dimensions are related to performance, yet make unique contributions. Proactiveness was positively related to all performance measures, whereas no significant relationship could be found for competitive aggressiveness. It

was further found that the moderator, industry life cycle, had a positive impact on the proactiveness performance relationship. In the early stages of the life cycle, proactiveness is positively related to performance. Competitive aggressiveness, on the other hand, is not likely to positively influence the performance relationship in the early life-cycle stages.

Chadwick *et al.* (2008:76-77) find support for a two-factor structure with the dimensions of innovativeness and proactiveness. It is suggested that firms which try to improve their entrepreneurial orientation do not need to score high on all dimensions, but rather emphasise one dimension that fits their current business situation.

Dess, Lumpkin and McGee (1999:97) argue that the dimensions of entrepreneurial orientation should not be considered only from a unidimensional or multidimensional perspective, but rather be analysed in a temporal dimension. This perspective suggests that firms could, for example, be rather low in innovation and proactiveness with regard to entering new ventures; however they could expose significant levels of risk-taking when implementing the venture by making heavy investments in plant, equipment and human resources.

Kreiser *et al.* (2002:85-86) found in their international research study that the three dimensions of entrepreneurial orientation, innovation, proactiveness and risk-taking are unique sub-dimensions. Furthermore, these dimensions often vary independently of each other. It is argued that researchers need to be clear about their research objective in order to decide if an aggregated measure or an independent measure of the entrepreneurial orientation should be applied. The decision should also be led by the question of whether accuracy is more important than simplicity. If simplicity is more important, a combined measurement is appropriate.

To sum up, the presented studies have argued that entrepreneurial orientation consists of the following concepts: autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness (Lumpkin & Dess, 1996:149). Various studies have investigated whether entrepreneurial orientation should be considered as a unidimensional or multidimensional construct. The studies demonstrated that

both approaches can be adequate (Chadwick *et al.,* 2008; Dess *et al*., 1999; Kreiser *et al.,* 2002; Miller, 1983; Rauch *et al.,* 2009). The important aspect of dimensionality of research constructs will be further discussed in chapter four.

2.3.1.2 Antecedents and consequences of an entrepreneurial orientation

Antecedents

Covin and Slevin (1991:7-8) provide a firm-level model of antecedents and consequences of an entrepreneurial posture. Entrepreneurial posture is often used synonymously with entrepreneurial orientation (Zahra, Jennings & Kuratko, 1999:51). It describes a firm's tendency towards risk-taking, innovation, proactive and aggressive behaviour.

The behavioural model consists of three independent constructs: external variables, strategic variables and internal variables, which influence entrepreneurial orientation and hence firm performance. Firm performance is the dependent variable in the model. The relationships between the different variables are described as direct and moderating relationships (Covin & Slevin, 1991:9).

The following paragraphs outline the different constructs and their concepts.

Entrepreneurial orientation comprises the concepts of risk-taking, innovation intensity and proactiveness (Covin & Slevin, 1991:10).

The first independent construct includes *external variables*, which relate to environmental variables such as technological sophistication, dynamism, hostility and industry life-cycle stages (Covin & Slevin, 1991:10). It is noted that firms in high-tech industries often exhibit a high level of entrepreneurial orientation. This also applies to firms in hostile and dynamic environments, as firms in these settings often search for opportunities in a growing industry segment. The influence of environmental variables on the relationship between entrepreneurial orientation and firm performance is a moderating one rather than a direct effect. It is argued that this also applies to the variable industry life cycle (Covin & Slevin, 1991:11).

Strategic variables are summarised in the second construct and consist of mission strategy and business practices. The mission strategy of a firm describes the general objectives of the business, without describing specific measures to achieve those objectives. It can be found that an entrepreneurial orientation is mainly present in organisations that apply a mission strategy of building, investing and growing. Business practices and competitive tactics refer to the operational side of an organisation, dealing with operations, financing, marketing and staffing of the organisation (Covin & Slevin, 1991:12-14).

The third construct describes a set of *internal variables* which includes top management values and philosophies, organisational resources and competences, organisational culture and organisational structure. It is stated that top management values and beliefs ultimately define the entrepreneurial orientation of the firm (Covin & Slevin, 1991:14-15).

Internal variables have been investigated by various researchers in the past. The following paragraphs outline a basic description of the variables. As the concept of entrepreneurial orientation is also applied in a corporate entrepreneurship context, a more detailed description will be presented in section 2.3.2.

Khandwalla (1976/77:22-24) describes different dimensions of top management styles and the impact of particular styles on organisational performance. The dimensions include management's orientation towards risk-taking, technocracy, organicity, participation and coercion. An entrepreneurial style has been described as being bold, risky, aggressive but also intuitive in decision making and with a strong commitment to growth. Khandwalla (1976/77:36) finds that an entrepreneurial style is related to high performance of firms. However, Khandwalla (1976/77:37) questions whether performance is a function of management style, or management style is a function of performance. It is quite likely that organisations which show a high performance tend to become more risk-taking, while management is more relaxed with regard to supervision, which leads to a more organic structure.

Organisational resources and competencies are considered in their broadest sense, including financial resources, manufacturing flexibilities and human capital.

Depending on their availability, these resources can either enhance or impede entrepreneurial behaviour (Covin & Slevin, 1991:15).

Ireland *et al.* (2001:57-58) argue that intangible resources such as organisational learning and the acquisition and dissemination of knowledge throughout the organisation are more likely to lead to a competitive advantage and hence higher performance than tangible resources.

An entrepreneurial culture is fostered by management to encourage risk-taking, innovation and proactive behaviour within the organisation. It is argued that entrepreneurial orientation and an entrepreneurial culture are reinforcing. However, the direction of the relationship is considered to be from the organisational culture to an entrepreneurial posture (Covin & Slevin, 1991:17). Zahra (1993a:10) argues that the Covin and Slevin (1991) model is partly overlapping. Organisational culture and management philosophy have been used as interchangeable constructs in previous research. Moreover, organisational culture and structure are also closely linked.

Organisational structure can be defined in various ways. The structure can relate to the formalisation and centralisation of firms' activities. An organisational structure can also be considered organic or mechanistic.

Organic structures are characterised by flexible administration, informality and authority grounded in expertise, commitment to the task and a network structure, whereas mechanistic structures are considered to be the opposite (Burns & Stalker, 1994:121; Covin & Slevin, 1988:218-219). In order to achieve firm performance, researchers suggest a fit between the organisation's structure and the entrepreneurial orientation (Covin & Slevin, 1988:218; Khandwalla, 1976/77:37).

Covin and Slevin (1989:76) argue that organic structures allow for rapid response in uncertain environments, whereas a mechanistic structure is more appropriate in static environments.

Structure can also relate to the organisation of departments and business units of an organisation. The relationship between organisational structure and entrepreneurial

orientation is twofold. First, an entrepreneurial orientation can influence organisation structure indirectly through its influence on the entrepreneurial environment. Second, more frequently a direct relationship between organisational structure and entrepreneurial orientation can be observed, where the way in which an organisation organises its departments or the hierarchy influences the innovative, risk-taking and proactive behaviour of the employees (Covin & Slevin, 1991:17-18).

Consequences

The dependent variable in the Covin and Slevin (1991:19) model is firm performance. Firm performance can be measured by financial and non-financial outcomes (Lumpkin & Dess, 1996:153-155). Financial measures relate to traditional accounting measures, sales growth, market share and profitability. Non-financial measures consider factors such as reputation, public image, employee commitment and satisfaction (Lumpkin & Dess, 1996:153-155).

Firm performance has been measured through subjective and objective measures in past research. Subjective measures include management's perception of performance criteria. Objective measures relate to accounting measures. Research indicates that a strong correlation between subjective and objective measurements exists. Subjective measures have proved to be reliable and valid measures in past research (Covin & Slevin, 1988:226; Narver & Slater, 1990:27; Slater & Narver, 2000:71). Zahra (1993a:11-12) observes that different entrepreneurial initiatives may only result in a financial payoff at different points in time. However, the contribution of entrepreneurship to survival and growth of firms must not be underestimated.

An entrepreneurial orientation is relevant for small and medium sized businesses as well as for larger organisations. The following paragraphs outline the strategy and construct of corporate entrepreneurship.

2.3.2 Corporate entrepreneurship

Continuous changes in the competitive environment make it necessary for organisations to adapt internally. The strategies to achieve this target are multifaceted, such as outsourcing, restructuring, re-engineering, delayering and

downsizing. These changes reflect a movement from traditional to entrepreneurial management (Cooper, Markman & Niss, 2000:122). However, in order to sustain a competitive advantage, organisations need to apply corporate entrepreneurship as a strategy (Kuratko & Morris, 2003:23-24).

Corporate entrepreneurship can be conceptualised in three different ways. First, it relates to organisations that enter a new business. Second, it relates to individuals developing a new idea within the corporate context. Third, it can be a firm-level perspective which is characterised by an entrepreneurial orientation that is carried throughout the organisation. These three dimensions are not mutually exclusive but can co-exist within one organisation (Covin & Miles, 1999:48).

The following paragraphs will outline the dimensions of corporate entrepreneurship.

2.3.2.1 Dimensions of corporate entrepreneurship

Guth and Ginsberg (1990:5) describe the paths an organisation can take to pursue corporate entrepreneurship from two different angles. First, corporate entrepreneurship can be considered as an internal venturing process which considers the establishment of a new business within an existing organisation. Second, it is a strategic renewal process in which organisations renew themselves by pursuing innovative ideas.

Covin and Miles (1999:50) argue that corporate entrepreneurship as a firm-level perspective must consider the objective of high performance or improving competitive advantage. This is not only achieved by entrepreneurial orientation qualities such as innovation, proactiveness and risk-taking, but requires efforts of rejuvenation, renewal and redefinition of the organisation and its market.

Hisrich *et al.* (2008:69) describe four key elements of corporate entrepreneurship: new business venturing, innovativeness, self-renewal and proactiveness.

Morris *et al*. (2008:81) capture the same concepts as those outlined by Guth and Ginsberg (1990), Covin and Miles (1999) and Hisrich *et al.* (2008) and describe the two basic paths in more depth.

The first path, corporate venturing, can take three different forms: internal, cooperative and external corporate venturing.

With internal corporate venturing, businesses are created within the organisational framework. These businesses can stay within the organisational structure or develop into organisational units, such as a new division (Antoncic & Hisrich, 2001:498; Morris *et al*., 2008:81; Sharma & Chrisman, 1999:20).

Cooperative corporate venturing refers to the creation of new businesses, together with an external partner who also has ownership in the business (Morris *et al.*, 2008:81).

External corporate venturing refers to firms that are created by parties outside the organisation. The degree of separateness from the organisation may vary. The organisation may invest or fully acquire the relevant firm. However, most often the venture remains outside the organisational boundaries (Morris *et al.,* 2008:81; Sharma & Chrisman, 1999:19).

The second path, renewal of the organisation is described as strategic entrepreneurship which can be manifested in five different forms: strategic renewal, sustained regeneration, organisational rejuvenation, domain redefinition and business model reconstruction (Morris *et al*., 2008:80-81).

Strategic renewal targets an organisations' position in relation to its environment. The environment includes the organisation's markets and competitors. Strategic renewal requires the implementation of a new business strategy that needs a certain amount of risk-taking. Strategic renewal strategies can be used to redefine the current operating market and to exploit product-market opportunities to outperform competitors (Antoncic & Hisrich, 2001:498-499; Covin & Miles, 1999:52-53; Dess, Ireland, Zahra, Floyd, Janney & Lane, 2003:355; Hisrich *et al.,* 2008:69; Morris *et al.,*

2008:90). Stopford and Baden-Fuller (1994:522) label this kind of behaviour “frame-breaking change” referring to the Schumpeterian innovation which produces something significantly different from the current status quo and increases competition.

Sustained regeneration is the most frequently recognised form of corporate entrepreneurship. It describes a firm-level activity of constantly introducing new products or services or entering new markets. For this purpose organisations mainly use their innovativeness. Successful organisations have organisational structures, cultures and systems in place that support the innovation activity (Antoncic & Hisrich, 2001:498; Covin & Miles, 1999:51; Dess *et al.*, 2003:354; Morris *et al.*, 2008:90).

Organisational rejuvenation or organisational renewal targets the organisation per se. The organisation changes or improves its internal operations such as the use of processes, structures and capabilities in order to increase competitiveness. Firms can for example change their value chain and hence identify processes to better serve their customers and so create value. Rejuvenation efforts target primarily support activities of the firm, rather than primary activities which relate to the core business of the firm (Antoncic & Hisrich, 2001:498; Covin & Miles, 1999:52; Dess *et al*., 2003:355; Morris *et al*., 2008:91).

Domain redefinition refers to strategies that proactively search for the creation of new products and markets that have not been occupied by competitors before. Organisations that are the first ones in a new market can shape the structure of the new industry and thereby establish a competitive advantage. Approaching new markets is characterised by innovative behaviour. Such organisations also show proactive behaviour, as they are the first ones in the new market arena, which also demonstrates their risk-taking behaviour and necessarily results in new business creation (Covin & Miles, 1999:54-55; Dess *et al*., 2003:355; Morris *et al*., 2008:91).

Kim and Mauborgne (2005:22-23) refer to the new market spaces which have not been occupied by competitors before as blue oceans. Strategic managerial decisions and actions are required to deliver products and services in a new market. New markets can be created through innovation that is supported by management.

Business model reconstruction refers to newly designing or redesigning the firm's core business models in order to improve efficiency or differentiate it from competitors. Forms of business model reconstruction include outsourcing or vertical integration (Morris *et al*., 2008:92). Another approach that assists an organisation to build a competitive advantage is to form strategic alliances. Strategic alliances cover cooperative agreements among two or more firms and can be beneficial in various ways. First, they can open up new markets for the firm. Second, cost sharing with regard to product development can be achieved. Third, knowledge and skills can be exchanged, and fourth, technological standards can be set (Cooper *et al*., 2000:124).

Zahra (1993b:320) investigates the relationship between external environment and the type of corporate entrepreneurship that should be pursued. It was found that firms in dynamic growth environments primarily invest in new business creation, new product introduction and internal organisational changes to improve innovation. Business redefinition was found to be the dominant aspect with firms in hostile environments that are rich in technological opportunities. Firms in static environments showed a low emphasis on corporate entrepreneurship (Zahra, 1993b:329-330).

Stopford and Baden-Fuller (1994:521,528) found that different types of corporate entrepreneurship can exist in the same firm. Furthermore, entrepreneurial attributes such as proactiveness, aspirations that go beyond current capabilities, team orientation, a capability to resolve dilemmas and a learning capability are common to all types of corporate entrepreneurship. However, their intensity and relative importance change over time.

Applying corporate entrepreneurship as a strategy requires an entrepreneurial behaviour throughout the organisation with the target of continuous activities towards opportunity recognition and implementation. The triggers for these activities can be found in the external and internal environment (Ireland, Kuratko & Morris, 2006:13; Ireland *et al*., 2009:21; Kuratko & Morris, 2003:29; Morris *et al*., 2008:194). External triggers relate to changes in the competitive environment such as regulatory changes. Relevant internal triggers are management directives, employee rewards and resource availability (Kuratko & Morris, 2003:29).

The next section further outlines antecedents and consequences of corporate entrepreneurship.

2.3.2.2 Antecedents and consequences of corporate entrepreneurship

Obstacles to and opportunities for corporate entrepreneurship have been described as affecting several areas. Researchers have focused on the strategic issues, external environment and individual and organisational characteristics to describe the level and success of corporate entrepreneurship.

Antecedents

Ireland *et al.* (2009:38) state that corporate entrepreneurship is a specific type of strategy manifesting itself in a strategic vision, an organisational architecture that promotes entrepreneurship and entrepreneurial processes and behaviour throughout all levels of the organisation.

In order for corporate entrepreneurship to become an integral part, it needs to be incorporated into the strategic process (Burgelman, 1984:154). Zahra (1991:264) argues that corporate strategy is an important predictor for corporate entrepreneurship. A fit needs to be present between the organisation's strategy and its actions. The strategies used and actions that organisations can take refer to the different types of corporate entrepreneurship outlined in the previous section.

Ireland *et al*. (2001:50-51) draw a clear distinction between entrepreneurial and strategic actions. However, both have intersections and contribute to firm growth and wealth creation. Entrepreneurial action is considered as a kind of behaviour that allows a firm to explore new markets, identify new customers or combine resources in a new way. Strategic actions provide the framework within which entrepreneurial actions such as innovations can be pursued.

Environmental changes, such as industry dynamics, changes in market structure or regulatory changes, provide opportunities for corporate entrepreneurship (Guth & Ginsberg, 1990:7; Khandwalla, 1987:44; Miller, 1983:771,775; Schindehutte *et al*., 2000:22; Zahra, 1991:263-264).

Zahra (1991:262,275-277) empirically tested a model of predictors and financial outcomes of corporate entrepreneurship. The predictors considered three constructs. The first construct, external environment, consisted of the dynamism, hostility and heterogeneity variables. The second construct was grand strategy, represented by growth and stability strategies. The third construct, organisation, included concepts such as structure, communication, scanning, integration, differentiation, control and values. The outcome was measured as financial performance, represented by various accounting measures. It was found that environment and grand strategy were positively related to corporate entrepreneurship and the respective financial performance outcomes. The results for organisational aspects were mixed. Communication and scanning were positively related with corporate entrepreneurship. Differentiation was positively related to external corporate entrepreneurship activities, but negatively related to internal activities, whereas integration showed the opposite results. The control variable was negatively related to internal and external corporate entrepreneurship activities.

Zahra (1993b:319,322-324) investigated two external environmental factors, environmental munificence and hostility, and found that they positively influenced corporate entrepreneurship. Environmental munificence included four dimensions: dynamism, technological opportunities, industry growth and demand for new products. Hostility refers to unfavourable conditions in the environment, such as declining demand and changes in technology that make the organisation's products obsolete. Furthermore, if competitive rivalry is high, firms must innovate in various directions in order to stay competitive.

Antoncic and Hisrich (2001:505,520) empirically tested their model of corporate entrepreneurship, which included environmental and organisational characteristics. The environmental factors included the same variables as Zahra's (1993b) model and two additional variables, unfavourability of change and competitive rivalry. It was found that environmental characteristics were directly and positively related to corporate entrepreneurship.

Individual characteristics, such as the need for achievement, energy level, conformity, dominance, goal orientation, risk-taking propensity and internal locus of

control, have been investigated (Guth & Ginsberg, 1990:7; Hornsby *et al*., 1993:32-33).

Holt *et al*. (2007:41,50) empirically assessed a model of corporate entrepreneurship that investigated the influence of individual, context and process variables on corporate entrepreneurship and its relevance to specific outcomes such as job satisfaction and commitment. It was found that context and process variables explained corporate entrepreneurship, but individual characteristics such as extraversion, openness, agreeableness, conscientiousness and neuroticism did not.

Hornsby *et al.* (1993:31) presented a conceptual model of corporate entrepreneurship that postulates that an interaction of organisational and individual characteristics forms the decision of employees to act entrepreneurially.

In order to provide an environment conducive to corporate entrepreneurship, researchers have investigated several internal factors. However, there is no agreement on which of the internal factors enhance corporate entrepreneurship the most (Hornsby, Kuratko & Montagno, 1999:14; Hornsby *et al*., 2002:255). Further, it is argued that these internal factors are highly interdependent (Morris, van Vuuren, Cornwall & Scheepers, 2009:432).

Miller (1983:770-771) states that organisational factors such as leadership style, organisational structures and environmental dynamics can enhance or impede firm-level entrepreneurship that is characterised by innovative, risk-taking and proactive behaviour.

Researchers have mainly investigated five organisational factors that need to be considered in order for corporate entrepreneurship to flourish. These factors include management support, work discretion, rewards/reinforcement, resources/time availability and organisational boundaries (Holt *et al.*, 2007:44; Hornsby *et al*., 1993:32; Kuratko *et al*., 1993:32; Kuratko *et al*., 2004:82).

Zahra (1991:265-266) draws another distinction between tangible and intangible organisational factors. Tangible factors relate to the formal organisational structure

and intangible factors refer to organisational values. Zahra (1991:277) finds that tangible factors, which are represented by the firm's approach to internal communication and scanning activities such as collection, analysis and interpretation of information, positively influence corporate entrepreneurship. Intangible factors include well-articulated organisational values and have also been reported to be conducive to corporate entrepreneurship.
The following paragraphs expand on organisational factors for corporate entrepreneurship.

Management support has been considered to be one of the major factors facilitating corporate entrepreneurship. This dimension includes management's willingness and commitment to support entrepreneurial activities and also to provide necessary resources or expertise (Antoncic & Hisrich, 2001:502,519; Covin & Slevin, 1991:14-15; Hisrich & Peters, 1986:318; Hornsby *et al.,* 1993:32; Hornsby *et al.,* 1999:11; Hornsby *et al.,* 2002:259; Ireland *et al*., 2009:31; Khandwalla, 1987:53; Kuratko, Montagno & Hornsby, 1990:55, Kuratko *et al*., 1993:30; Kuratko, Ireland & Hornsby, 2001:68).

Organisational resources encompass tangible and intangible resources; intangible resources are more likely to lead to a competitive advantage as they are complex and difficult to imitate, such as human capital and reputation. Tangible resources may include manufacturing facilities and technology. Time availability to pursue new ideas has also been considered to be an important factor (Covin & Slevin, 1991:15; Hisrich & Peters, 1986:319; Hornsby *et al.*, 1993:32; Hornsby *et al*., 1999:11; Hornsby *et al.*, 2002:260; Ireland *et al.,* 2009:32; Kuratko *et al*., 1990:55).

Organisational structure can be defined in terms of centralisation and formalisation, as well as in terms of organic versus mechanistic structures. These dimensions affect decision-making processes, hierarchy levels in the organisation and flow of communication between departments (Burgelman, 1984:164; Covin & Slevin, 1991:17-18; Hisrich & Peters, 1986:318; Hornsby *et al.,* 1993:32; Hornsby *et al.,* 1999:11; Hornsby *et al.*, 2002:260; Ireland *et al*., 2006:14; Ireland *et al*., 2009:31; Kuratko *et al.,* 1990:55; Kuratko *et al.,* 1993:32; Kuratko *et al*., 2001:67).

Reward systems should be designed to emphasise corporate entrepreneurship, especially with middle and top managers. The reward system should encourage innovation and risk taking and should be based upon performance (Burgelman, 1984:164; Hisrich & Peters, 1986:320; Hornsby *et al.,* 1993:32; Hornsby *et al.,* 1999:11; Ireland *et al*., 2006:14; Kuratko *et al*., 1990:52; Kuratko *et al*., 1993:32; Kuratko *et al*., 2001:66; Miles, Heppard, Miles & Snow, 2000:103).

Consequences

Organisations that facilitate corporate entrepreneurship and align their business units will realise the outcomes in terms of financial performance and competitive advantage (Antoncic & Hisrich, 2001; Covin & Miles, 1999; Dess *et al*., 2003; Kuratko *et al*., 2004; Zahra, 1991).

The outcomes of corporate entrepreneurship have been described as relating to individual- and organisational-level outcomes (Kuratko *et al*., 2004:83).

From an individual perspective, corporate entrepreneurship can be evaluated with regard to recognised and rewarded entrepreneurial behaviour. Rewarding entrepreneurial behaviour with bonuses, salary increases, equity, promotion and recognition systems are effective means (Ireland *et al.,* 2009:34; Morris *et al.,* 2008:316).

From an organisational perspective, it can be considered whether performance of the organisation has improved and if a competitive advantage has been achieved. For that purpose organisation-level outcomes can be analysed from a financial and non-financial perspective (Covin & Miles, 1999; Dess *et al*., 1999; Zahra & Covin, 1993).

Covin and Miles (1999:56) argue that different types of corporate entrepreneurship allow for different competitive advantage positions.

A *cost-leadership* position can be established with a strategy of organisational rejuvenation, as the actions target mainly internal processes which can lead to cost savings. Dess *et al.* (1999:88) report on two studies, one by Dess, Lumpkin and Covin (1997) and one by Zahra and Covin (1993), which investigated the relationship between cost leadership and firm performance. It was found that in firms where

managers apply an entrepreneurial approach to decision making, cost leadership positively influences performance (Dess *et al*., 1997:691). Dess *et al*. (1997:691-692) note that a cost-leadership strategy to achieve a competitive advantage can also be pursued in organisations without an entrepreneurial orientation. However, firms that combined cost-leadership strategy and an entrepreneurial advantage were shown to outperform other firms.

Zahra and Covin (1993:463-464) found that a cost-leadership strategy positively influences technological orientation, process innovation and new product development.

A *differentiation-based* competitive advantage can be achieved with a sustained regeneration approach and a quick response strategy that is applied with a domain redefinition. Introducing new products or services combined with an established brand will improve the organisation's competitive advantage. Strategic renewal of an organisation can result in various competitive advantage positions, depending on the specific situation (Covin & Miles, 1999:56-57).

A financial perspective considers measures such as sales growth, market share, return on assets and profitability (Covin & Slevin, 1991:19; Holt *et al.*, 2007:44).

Dess *et al.* (2003:365) and Zahra (1991:276) find that corporate entrepreneurship activities positively influence firms' financial performance.

Antoncic and Hisrich (2001:496) report a positive relationship between corporate entrepreneurship and firm growth in absolute and relative terms. The measures have accounted for absolute measures in growth regarding number of employees and total sales. In addition, relative growth has been measured by an increase in market share compared with the competition. In a similar study Antoncic and Hisrich (2004:524,539) found that corporate entrepreneurship represented by organisational and environmental factors is a good predictor for wealth creation, which covers the availability of new financial funds. Moreover, profitability and growth were positively influenced by corporate entrepreneurship.

A non-financial perspective on the outcomes of corporate entrepreneurship considers capability development and job satisfaction of employees, which improve the

competitive capability of the organisation and can decrease employee turnover (Holt *et al*., 2007:44; Ireland *et al.,* 2009:34; Morris *et al.*, 2008:317).

Implementing corporate entrepreneurship in an organisation can also have an effect on its strategic positioning.

Ireland *et al.* (2009:24,34) present a model of corporate entrepreneurship as a strategy consisting of external and internal antecedents that result in an improved firm performance. Performance in this study consists of capability development and strategic repositioning. Capability is developed in the process of entrepreneurial initiatives which enable the firm to compete successfully. Applying corporate entrepreneurship strategy can also have an effect on the firm's strategic positioning. Three outcomes are suggested. First, it can put the organisation in a new position within the existing product-market domain; second, it can change the attributes of the domain; and third, it can position the firm in a new product-market domain.

Another perspective on corporate entrepreneurship outcomes is innovation, with regard to innovation performance and new ideas being implemented in organisations.

Goodale, Kuratko, Hornsby and Covin (2010:2,4,8) present a model of corporate entrepreneurship antecedents such as management support, work discretion, rewards, time availability and organisational boundaries and their direct influence on innovation performance. Innovation performance is described as the success rate of a firm in achieving its goal towards product-market or technological innovation. It is found that management support and organisational boundaries that encourage coordinated behaviour positively influence corporate entrepreneurship.

Hornsby, Kuratko, Shepherd and Bott (2009:244-245) analysed the outcome parameter of corporate entrepreneurship by the number of ideas that had been implemented. It was found that organisational antecedents such as management support and work discretion positively influenced the number of ideas implemented. However, rewards and reinforcement and time availability did not influence the number of ideas implemented in the organisation.

To sum up, the presented studies considered various antecedents to corporate entrepreneurship and outcomes of a corporate entrepreneurship approach. The presented antecedents can be summarised in three different categories. First, corporate entrepreneurship needs to be incorporate into the strategic framework of the organisation (Burgelman, 1984; Ireland *et al*., 2009; Zahra, 1991). Second, environmental changes positively stimulate corporate entrepreneurship to take place (Antoncic & Hisrich, 2001; Zahra, 1991; Zahra, 1993). Third, individual and organisational characteristics provide an environment conducive to corporate entrepreneurship. Organisational factors include management support, resources, organisational structure and reward systems (Antoncic & Hisrich, 2001; Covin & Slevin, 1991; Hisrich & Peters, 1986; Hornsby *et al.,* 1993; Hornsby *et al.*, 1999; Hornsby *et al.,* 2002; Ireland *et al*., 2009; Khandwalla, 1987; Kuratko *et al*., 1990; Kuratko *et al*., 1993; Kuratko *et al*., 2001).

The outcomes of corporate entrepreneurship have been described in terms of individual and organisational outcomes. Individual outcomes considered employee bonuses and recognition (Ireland *et al.,* 2009; Kuratko *et al*., 2004; Morris *et al*., 2008). Organisational outcomes relate to financial performance and competitive advantage (Covin & Miles, 1999; Covin & Slevin, 1991; Dess *et al*., 2003; Holt *et al.,* 2007; Zahra, 1991). In addition, non-financial outcomes are considered, which relate to employee satisfaction, which in turn reduces employee turnover (Holt *et al.,* 2007; Ireland *et al.,* 2009; Morris *et al.,* 2008).

2.3.3 Market orientation

In the 1960s firms' perspectives changed from a product and sales orientation towards a customer orientation (Morris & Paul, 1987:250). A customer orientation can be considered synonymous to a market orientation, which is concerned with the implementation of the marketing concept (Deshpandé, Farley & Webster, 1993:27).

Until the 1990s researchers basically investigated only whether organisations applied a marketing concept or not. However, different dimensions of a market orientation, their antecedents and consequences, started to become the focus of researchers in

the 1990s (Jaworski & Kohli, 1993:54; Kohli & Jaworski, 1990:1; Narver & Slater, 1990:20).

2.3.3.1 Dimensions of market orientation

Research conducted by Kohli and Jaworski (1990), Jaworski and Kohli (1993), Kohli *et al*. (1993) and Narver and Slater (1990) form the basis of the market orientation construct. The conceptualisation of the construct will be further outlined.

Kohli and Jaworski (1990:1-3) define market orientation as the implementation of the marketing concept. The central part of the market orientation construct is customer focus. It is noted that market orientation includes the dimensions of information generation, dissemination and responsiveness to market intelligence, in which all departments must engage.

Intelligence generation is considered to be a broad concept that includes not only customers' expressed needs but also monitoring of external factors that could influence these preferences, such as government regulations and actions taken by competitors. Customer needs should also be anticipated. Intelligence is generated through formal and informal means, involving primary and secondary data collection. Moreover, intelligence generation is considered to be an activity that is conducted across all departments, not only in the marketing department (Kohli & Jaworski, 1990:4-5; Kohli *et al.,* 1993:468).

The second dimension is intelligence dissemination, which refers to the communication processes that are applied in order to transmit the gathered information. Information can be disseminated along formal structures or informally in the organisation. A balanced distribution of information along horizontal and vertical lines should be considered (Kohli & Jaworski, 1990:5-6; Kohli *et al.,* 1993:468).

Responsiveness to market intelligence refers to behaviour of all departments. It can take several forms, such as selecting target markets and designing and promoting new products or services (Kohli & Jaworski, 1990:6; Kohli *et al.,* 1993:468).

Narver and Slater (1990:21) conceptualise market orientation as having three behavioural dimensions: customer orientation, competitor orientation and interfunctional coordination. Two decision criteria, long-term focus and profitability, are also considered.

Customer orientation refers to an in-depth understanding of the customer's value chain and how it may evolve over time, depending on market dynamics. This understanding is crucial in developing a sustainable competitive advantage (Narver & Slater, 1990:21). Slater and Narver (1998:1002) emphasise the difference between a customer-led philosophy and a market orientation. They argue that a customer-led philosophy leads to reactive behaviour and a short-term focus. Market-oriented businesses are committed to understanding expressed and latent customer needs. Compared with customer-led businesses, market-oriented firms scan the environment broadly, apply a long-term focus and use different techniques to discover latent needs. Market-oriented firms also search for new markets and customers, which may renew the business (Slater & Narver, 1998:1002-1003).

A competitor orientation consists of analysing competitors' strengths and capabilities to satisfy customers (Narver & Slater, 1990:21-22).

In order to create value for the customer, an interfunctional coordination of all departments in the organisation is required. To ensure that departments work closely together, the organisation's structure and reward systems must enforce such behaviour (Narver & Slater, 1990:22).

A long-term focus on implementing a market orientation needs to be applied. Moreover, profitability is considered to be the business objective and not necessarily an outcome of market orientation (Narver & Slater, 1990:22).

Researchers analysed the differences (Kohli *et al*., 1993; Matsuno, Mentzer & Rentz, 2005) and the commonalities (Diamantopoulos & Hart, 1993) between the two market orientation perspectives.

Kohli *et al.* (1993:468) consider their model to be based on a market focus rather than customer focus, as presented by Narver and Slater (1990:21). Kohli *et al.* (1993:468) also emphasise interfunctional coordination and an activity focus related to intelligence processing rather than the effects of these activities such as profitability.

Matsuno *et al*. (2005:1-2) state that the difference between the two concepts is that Kohli and Jaworski (1990) focus on activities around market orientation, whereas Narver and Slater (1990) apply a cultural perspective. Narver and Slater (1990) consider organisational culture as an antecedent to market orientation, whereas Kohli and Jaworski's (1990) model relates to internal and external environmental antecedents.

Diamantopoulos and Hart (1993:96) point out the similarities between the market orientation concepts specified by Kohli and Jaworski (1990) and Narver and Slater (1990). They argue that the customer and competitor orientation postulated by Narver and Slater (1990) relates to the generation of market intelligence proposed by Kohli and Jaworski (1990). Further, interfunctional coordination relates to intelligence dissemination. However, the concept of responsiveness to market intelligence is not found in the construct of market orientation presented by Narver and Slater (1990) (Diamantopoulos & Hart, 1993:96).

Kohli and Jaworski (1990:6) and Narver and Slater (1990:33) observe that market orientation should be considered to exist in every organisation. However, the degree of market orientation may vary across the organisation.

Matsuno *et al.* (2005:3) provide a generic concept of an extended market orientation construct that combines the concepts of Narver and Slater (1990) and Kohli and Jaworski (1990). Antecedents in the model are various firm-internal variables as well as environmental variables. Firm activities such as intelligence generation, dissemination and responsiveness are applied in an extended context covering various stakeholders such as customers, competitors, suppliers, regulatory factors and the macroeconomic environment. In their empirical assessment of the conceptual model, however no support could be found for the superiority of the

extended market orientation construct over the individual constructs of Narver and Slater (1990) and Kohli and Jaworski (1990).

Kohli *et al.* (1993:473) and Narver and Slater (1990:22) conceptualise and empirically assess market orientation as a one-dimensional construct. Kohli *et al.* (1993:473) found support for their market orientation construct consisting of information generation, dissemination and responsiveness to information. This is consistent with the findings of Leskiewicz Sandvik and Sandvik (2003:370).

Narver and Slater (1990:26) found support for a three-component model including the dimensions of customer and competitor orientation and interfunctional coordination. Long-term focus and profit emphasis have not been found to be part of the construct. Kumar, Subramanian and Yauger (1998:225) support the findings of Narver and Slater (1990:26) and note that although the two dimensions of long-term focus and profit emphasis are not part of the construct, they are strongly correlated with market orientation.

2.3.3.2 Antecedents and consequences of market orientation

Antecedents

Kohli and Jaworski (1990:6) identify three categories of antecedents to market orientation. These are senior management factors, interdepartmental dynamics and organisational systems.

A senior management focus and commitment to a market orientation is considered to be crucial. If management does not promote innovative behaviour, which is key to the process of responding to market needs, then a market orientation will not penetrate throughout the organisation. A management approach of risk taking, a willingness to pursue new ideas and a tolerance of failure is considered to be critical in achieving organisational success (Jaworski & Kohli, 1993:55,63; Kirca *et al.*, 2005:25; Kohli & Jaworski, 1990:7-9).

Interdepartmental dynamics are formal and informal relationships between departments. These relationships can result in departmental conflict, departmental

connectedness or consideration for the other departments' ideas (Jaworski & Kohli, 1993:55-56; Kohli & Jaworski, 1990:9-10). Kirca *et al.* (2005:29) found that interdepartmental connectedness has the strongest impact on market orientation when analysed with other firm-internal factors such as management emphasis and reward systems.

Conflict between departments can inhibit information dissemination and a collective responsiveness to customer needs, whereas a direct contact between departments can enhance the dissemination process. Having an openness to ideas of other departments is beneficial for information dissemination (Jaworski & Kohli, 1993:55-56; Kohli & Jaworski, 1990:9-10).

Organisational systems relate to structural issues such as formalisation and centralisation. It is argued that formalisation and centralisation inhibit the information generation and dissemination process, but facilitate the responsive action of the organisation (Jaworski & Kohli, 1993:56; Kohli & Jaworski, 1990:10). Kirca *et al.* (2005:25,29,37) did not find support for a negative relationship of formalisation and centralisation with market orientation. This might be due to fact that rules can also be designed to enhance market orientation. If management ensures the flow of information even in a centralised organisation, then market orientation can also be implemented successfully.

It is also argued that reward systems need to be designed in such a way as to complement a long-term organisational perspective considering customer satisfaction indicators (Jaworski & Kohli, 1993:56; Kohli & Jaworski, 1990:12).

The three dimensions of intelligence generation, dissemination and responsiveness are considered to be interrelated. Depending on the source of the information within the organisation, the dissemination and implementation process will be affected. The more politically accepted the source, the more likely the dissemination and implementation is to succeed (Kohli & Jaworski, 1990:12).

Consequences

Research on consequences of market orientation has received considerably more attention than the research on antecedents (Kirca *et al.,* 2005:28).

Research findings on the impact of market orientation on firm performance are mixed. On the one hand Narver and Slater (1990:33) found that businesses with higher market orientation also showed higher levels of profitability. On the other hand Jaworski and Kohli (1993:64) could not find support for a direct relationship between market orientation and objective financial parameters such as market share. It can be argued that a market orientation leads to higher market share over a longer time period.

Firm performance has been measured primarily by financial outcomes. However, research also considers positive effects of market orientation on employees and customers (Grinstein, 2008a:123; Jaworski & Kohli, 1993:60; Kohli & Jaworski, 1990:13).

Consequences of a market orientation on employees have been related to job satisfaction and commitment of employees. Employees' commitment to the organisation is considered to be high if there is a feeling that their contribution is worthwhile and appreciated. Furthermore, team spirit and customer orientation will increase (Jaworski & Kohli, 1993:57; Kirca *et al.,* 2005:25-26; Kohli & Jaworski, 1990:13).

Another outcome considers customer attitudes and behaviour. Satisfied customers will be loyal and promote a positive word of mouth (Kirca *et al*., 2005:25-26; Kohli & Jaworski, 1990:13).

Previous research also analysed the impact of market orientation on firm innovation. It has been found that market orientation positively influences innovation (Grinstein, 2008a:115; Grinstein, 2008b:166; Leskiewicz Sandvik & Sandvik, 2003:369; Lukas & Ferrell, 2000:239; Shergill & Nargundkar, 2005:34).

With regard to measuring financial performance, four concepts have mainly been used: profitability, relative price premium, sales growth and capacity utilisation (Leskiewicz Sandvik & Sandvik, 2003:359).

Slater and Narver (2000:71) found support for a positive relationship between market orientation and business profitability. Jaworski and Kohli (1993:63) note that market orientation was positively related to business performance when subjective measures were used. However, when objective measures were applied, market orientation was not related to performance.

According to Moorman and Rust (1999:187), three different types of measures to assess financial performance can be used. These measures are objective, secondary and subjective measures. They report that typically there is an unwillingness of management to share actual performance measures. Hence, management perception about performance has been used in previous research. A strong correlation between subjective and objective measures of performance has been revealed.

Besides studying direct effects of a market orientation on performance, research has considered moderating factors to this relationship.
McNaughton, Osborne and Imrie (2002:992-993) claim that the relationship between market orientation and performance is not as straightforward as some research postulates. A substantial amount of research has been concerned with the relationship between market orientation, entrepreneurial orientation and performance as a means of responding to the business environment (Miles & Arnold, 1991:49).

The findings of these studies are mixed. The following paragraphs outline research studies that empirically investigated these relationships.

First, research analysed whether the relationship between market orientation and performance is moderated by variables such as market, environmental and technological turbulence and competitive intensity.

Diamantopoulos and Hart (1993:119) could not find support for a positive relationship between market orientation and performance. When moderating variables such as market turbulence and competitive intensity were included, the same results were achieved.

Becherer and Maurer (1997:55) report similar findings. Only entrepreneurial orientation is reported to be directly related to a firm's change in profits. However, market orientation is related to business performance when moderated by environmental hostility.

Jaworski and Kohli (1993:64) and Slater and Narver (1994:54) found that the relationship between market orientation and performance is positive and is not moderated by market and technological turbulence and competitive intensity. These findings are also supported by Subramanian and Gopalakrishna (2001:3,10) and Shergill and Nargundkar (2005:41).

In a meta-analysis Kirca *et al.* (2005:35-36) analysed the impact of moderators such as market, environmental and technological turbulence and competitive intensity. It is hypothesised that market/environmental turbulence and competitive intensity increase the impact of market orientation on performance. Technological turbulence is considered to decrease the impact of market orientation on performance, as it becomes more important to innovate than to focus on customers' needs. However, insufficient empirical evidence was found for either hypothesised relationship.

Different results are reported by Kumar *et al.* (1998:227). Moderating variables such as competitive hostility, market turbulence and supplier's power influenced the relationship between market orientation and performance. Song and Parry (2009:156) found a positive relationship between environmental and technological turbulence, competitive intensity and the desired level of market orientation. It is claimed that the desired level of market orientation is correlated with the actual level of market orientation, which is influenced by senior management.

Second, research was concerned with whether market orientation and entrepreneurial orientation are directly related. In addition, the level of market orientation and/or entrepreneurial orientation on firm performance was investigated.

Various research studies found support for the correlation between market orientation and entrepreneurial orientation (Becherer & Maurer, 1997:55; Keh,

Nguyen & Ng, 2007:605; Matsuno, Mentzer & Özsomer, 2002:25; Miles & Arnold, 1991:60; Morris & Paul, 1987:256-257; Smart & Conant, 1994:9).

However, it is noted that market orientation and entrepreneurial orientation are distinct constructs (Miles & Arnold, 1991:60; Zahra, 2008:134).

Findings on the relationship between market orientation, entrepreneurial orientation and firm performance are threefold.

First, support has been found for a joint positive relationship of market orientation and entrepreneurial orientation to influence firm performance (Barrett & Weinstein, 1998:64; González-Benito, González-Benito & Munoz-Gallego, 2009:516; Zahra, 2008:126).

Second, other research has found support for only entrepreneurial orientation to be related to firm performance but not market orientation (Becherer & Maurer, 1997:55; Keh *et al.,* 2007:605).

Third, market orientation has been positively related to firm performance, and entrepreneurial orientation has been found to have a moderating effect on that relationship (Blesa & Ripollés, 2003:11; Hult & Ketchen, 2001:905; Li, Zhao, Tan & Liu, 2008:128; Matsuno *et al*., 2002:26).

To sum up, the presented studies on antecedents and consequences of market orientation resemble those presented for corporate entrepreneurship. Antecedents include aspects of management support, risk taking and reward systems. Moreover, openness to new ideas as well as a good connection between departments is considered to be important (Jaworski & Kohli, 1993; Kirca *et al.,* 2005; Kohli & Jaworski, 1990). Consequences of a market orientation are studied more often than antecedents (Kirca *et al.,* 2005:28). The consequences most often considered are firm performance and competitive advantage, but aspects of customer satisfaction and employee satisfaction have also been studied (Grinstein, 2008a; Jaworski & Kohli, 1993; Kirca *et al*., 2005; Kohli & Jaworski, 1990). The research results are, however, rather different. Whereas Slater and Narver (2000:71) found a positive

impact by market orientation on business profitability, Jaworski and Kohli (1993:63-64) found no relationship for objective measures but did find a positive relationship for subjective performance measures.

For the purpose of this study, market orientation will be considered as a multi-dimensional construct consisting of dimensions of information generation, dissemination, responsiveness to information and interfunctional coordination.

2.4 CONCLUSION

The purpose of this chapter was to present a literature review on entrepreneurial marketing and its core dimensions of entrepreneurship and marketing.

It has been shown that entrepreneurship, corporate entrepreneurship and marketing have a substantial amount of overlap.

First, a strategic focus is applied within organisations to create an entrepreneurial and market orientation. It has been found that an entrepreneurial and a market orientation exist in every organisation, but vary in their amount and the degree to which they are applied.

Secondly, the research into antecedents and consequences of both entrepreneurship and marketing focus on similar areas such as firm-internal and environmental factors that can influence firm performance. Firm performance and competitive advantage are important outcome parameters for both research areas.

The next chapter will outline the separate constructs within the field of entrepreneurial marketing that builds on the commonalities between both research areas.

CHAPTER 3:
ENTREPRENEURSHIP AND MARKETING:
VALUE CREATION AS THE LINK

3.1 INTRODUCTION

As outlined in chapter two, research on the entrepreneurship/marketing interface has identified a number of commonalities between the two disciplines.
Carson (2010:8) summarises the commonalities and states that both disciplines consider innovation, creativity, opportunistic behaviour, flexibility and change orientation. Both disciplines include a managerial perspective and organisational behaviour. Moreover, both disciplines are process based and market driven.

A firm's market-driven behaviour, which relates to an understanding of and response to manifest and latent customer needs, has been widely studied within market orientation research (Day, 1998, 1999; Kohli & Jaworski, 1990; Narver & Slater, 1990; Narver *et al*., 2004).

However, contemporary research at the interface is concerned with an understanding of exceptional firm performance and competitive advantage, which cannot be explained by a market-driven understanding of the firm (Kumar *et al*., 2000; Schindehutte *et al*., 2008).

This chapter will firstly distinguish between the two different constructs of market-driven and market-driving behaviour of firms. Secondly, relevant literature on market-driving research will be presented and a summary of the literature will be given.
Thirdly, various definitions of market driving will be outlined and the definition that is applied to this study is presented.

Fourthly, research suggestions derived from previous research on market driving will be addressed and the focus of this study will be outlined. This is followed by a

general framework of market driving that provides the basis for this study. Then the conceptual model of market-driving ability in corporate entrepreneurship will be developed. The conceptual model will be presented with its antecedents and consequences deriving from constructs and concepts developed in entrepreneurship, marketing, strategy and organisational behaviour research.

3.2 MARKET-DRIVEN VERSUS MARKET-DRIVING BEHAVIOUR

Hamel and Prahalad (1994:29-30) argue that the wealth of firms in the future largely depends on their ability to create tomorrow's markets and to anticipate future opportunities. Competing in the future will require different strategies. Top management needs to think differently about its role in creating these strategies.

Hamel and Prahalad (1994:45-47) suggest a three-stage process, with overlapping steps, in order to compete in future. First, firms compete for intellectual leadership. This dimension refers to gaining insight into different trends which create new customer benefits or create new ways of delivering benefits. These trends need to be evaluated before the competition (Hamel & Prahalad, 1994:45-46).

Secondly, firms need to shape the direction of the industry development and acquire the necessary competencies to be able to deliver the products and services, acquire alliance partners and design the surrounding infrastructure (Hamel & Prahalad, 1994:46).

Thirdly, firms will compete against one another in the newly created market. Competition is then again targeting market share, cost, value, service and price (Hamel & Prahalad, 1994:46).

Hamel and Prahalad (1994:47) argue that today's businesses spend most of their effort and time in the last stage - of competing against one another - rather than looking for new opportunities in different industries or markets. The ideas presented by Hamel and Prahalad (1994) can be used to assess market-driven and market-driving behaviour of firms.

It is argued that market-driven firms optimise the third stage of the competition process, whereas market-driving firms evaluate opportunities to deliver better customer value and explore markets which are not yet served. The main differences between a market-driven and a market-driving approach have been studied along different dimensions. The following table summarises the main aspects that have emerged in literature and will be described in the following paragraphs.

TABLE 3.1: Summary of market-driven versus market-driving approaches

Dimension	Market-driven approach	Market-driving approach
Market / industry	Focus on existing markets/industries	Focus on existing and new markets/industries
Main business philosophy	How to retain and gain valuable customers	Shaping, creating, changing the market and/or behaviour of stakeholders
Main stakeholder focus	Customers	Entire range of stakeholders e.g. customers, competitors, employees, regulatory bodies
Strategic orientation	Reactive & proactive market orientation	Market orientation, entrepreneurial orientation, technology orientation
Outcomes	Short-term superior performance and competitive advantage	Long-term superior performance and competitive advantage

Sources: Barlow Hills & Sarin (2003); Harris & Cai (2002); Jaworski *et al*. (2000); Kumar *et al.* (2000); Narver *et al.* (2004); Schindehutte *et al*. (2008)

Market-driving firms are characterised by creating new markets or redefining the existing market in a way that makes competitors obsolete. Furthermore, market driving can occur on different levels, such as at an industry, a market or product

level. Change that occurs on an industry level tries to change the nature of the competition. Change on a market level requires an alteration of customer preferences, while product-level change considers the standards of current offerings. Hence, market driving does not only occur in existing and future markets but also with a different range of stakeholders (Barlow Hills & Sarin, 2003:15-16; Carrillat *et al*., 2004:2; Jaworski *et al.,* 2000:47-48).

Gaddefors and Anderson (2008:26-27) suggest that the market needs to be considered as a process rather than a pre-existing "thing". This is even more relevant when markets are created. It is argued that marketing and entrepreneurial elements are required to create markets. It is necessary to provide customers with knowledge of how to use the product as well as form their understanding of the product's value.

Kjellberg and Helgesson (2007:141-143) state that market practice involves activities of market shaping as well as activities to promote and sell in markets. A conceptual model for market shaping is presented. The model includes three dimensions that are interlinked. First, exchange practices are described as concrete activities related to the actual economic exchange. Second, representational practices capture the performance of the firm with regard to its exchange practices. Hence, information must be generated and be responded to. Third, normalising practices refer to guidelines, whether voluntary or legislated, of how the market should be shaped.

Market-driven firms focus on learning and understanding stakeholders in an existing market. As markets evolve, firms adapt to changing circumstances and try to stay ahead of competitors (Jaworski *et al.,* 2000:45; Schindehutte *et al.,* 2008:5). With regard to stakeholders, market-driven firms "… demonstrate a superior ability to understand, attract and keep valuable customers" (Day, 1999:5).

A market-driven firm can be characterised by specific capabilities and behaviours. The primary strategic orientation of market-driven firms is reactive and proactive.

A reactive market orientation refers to the response of the firm towards expressed customer needs. In the market-driven business orientation, the customer is at the centre of all activities, which influences the way the organisation approaches its

customers, employees and competitors. A firm learns about customer needs through continuous information generation (Day, 1998:8-10; Narver *et al.,* 2004:336; Slater & Narver, 1998:1001-1003; Tuominen *et al*., 2004:208).
A proactive market orientation uncovers latent needs, which are represented as current needs of which the customer is unaware. One approach to uncovering those latent needs is to observe customer behaviour and learn and infer from this behaviour possible solutions. Staying close to customers translates into customer satisfaction that transfers into customer loyalty (Day, 1998:8-10; Narver *et al.,* 2004:336; Slater & Narver, 1998:1001-1003; Tuominen *et al.,* 2004:208).

In order to change, shape or create markets, market-driving firms consider various strategic orientations such as an entrepreneurial orientation, a market orientation and a technology orientation to trigger innovation to achieve superior performance (Schindehutte *et al.,* 2008:13).

Existing organisations that want to pursue market driving need to overcome several obstacles (Kumar *et al.,* 2000:135). Chapter two addressed strategies for existing organisations on corporate entrepreneurship. One of these strategies targets domain redefinition. This approach helps organisations to find new markets and products and hence establish a competitive advantage. Preconditions for this approach are a certain amount of risk-taking, innovative behaviour and proactiveness within the organisation (Covin & Miles, 1999:54-55; Dess *et al*., 2003:355; Morris *et al*., 2008:91).

The outcomes of a market-driven approach have been described as leading to superior cost and investment efficiency, employee satisfaction, price premium, revenue growth and competitive pre-emption (Day, 1998:12). However, if every organisation in the market applies a market-driven approach, no one organisation will outperform the others and hence no long-term competitive advantage will be created (Carrillat *et al*., 2004:2).

The outcome of market-driving behaviour is the generation of capabilities through the discovery process that are not quantitatively measurable. These capabilities are

considered to contribute to an enduring competitive advantage (Jaworski *et al*., 2004:2; Schindehutte *et al*., 2008:15).

3.3 MARKET-DRIVING CONCEPTS AND FRAMEWORKS

As outlined in chapter two, entrepreneurial marketing is conceptualised as firm behaviour that includes dimensions of an entrepreneurial and a market orientation in order to create value for customers and achieve superior performance.

Over the past 10 years researchers have been concerned with analysing the behaviour of exceptional organisations such as Body Shop, IKEA, Swatch, Virgin and Starbucks (Kumar *et al*., 2000:130).

Analysing characteristics of market-driving firms and elaborating on ways to achieve market driving within existing organisations has been the research focus of various studies.

The following paragraphs outline the different concepts and frameworks researchers have developed so far to analyse market-driving behaviour.

3.3.1 Firm-internal dynamics: radical innovation (Kumar, Scheer & Kotler, 2000)

Kumar *et al.* (2000:130) state that market-driving firms create radical innovations that arise from a vision that sees the world in a different way and addresses latent or emerging customer needs. A radical innovation evolves around a discontinuous leap in value proposition and the implementing of a unique business system. A value proposition can be created around product/service benefits, cost and price. A unique business system refers to all activities around creating, producing and delivering the product/service to the customer. Furthermore, market-driving firms focus on new markets, redefine the market segmentation in a fundamental way and make competitors obsolete. Figure 3.1 summarises the different types of strategic innovation.

Kumar *et al.* (2000:131-132) describe market driving as an orientation distinct from other market orientations such as being sales driven, market driven or customer driven.

In an exploratory study of 25 market-driving firms, Kumar *et al.* (2000:132) found the following distinguishing elements from other firms.

- First, market-driving firms are guided by vision rather than traditional market research, as customers are usually not able to consider the benefits of revolutionary products, concepts or technologies. Market-driving firms see opportunities to fill latent and unmet needs (Kumar *et al*., 2000:132).

- Second, market-driving firms also change the market by replacing previous market segments with new ones (Kumar *et al*., 2000:133).

- Furthermore, new price points are established. Market-driving firms are better able to provide the same quality at a lower price or provide a unique value for which consumers are prepared to pay a significantly higher price (Kumar *et al*., 2000:133-134).

- Market-driving firms also educate the customer about the product and how to use it. They exceed customer expectations through creating a leap in customer value (Kumar *et al*., 2000:134-135).

- Next, market-driving firms reconfigure distribution channels that result in unique business systems (Kumar *et al*., 2000:134).

- Lastly, market-driving firms do not invest a great deal in traditional advertising, as their message is transmitted via various channels, such as popular press reporting on innovations, and early adopters and opinion leaders spreading the news (Kumar *et al.*, 2000:134).

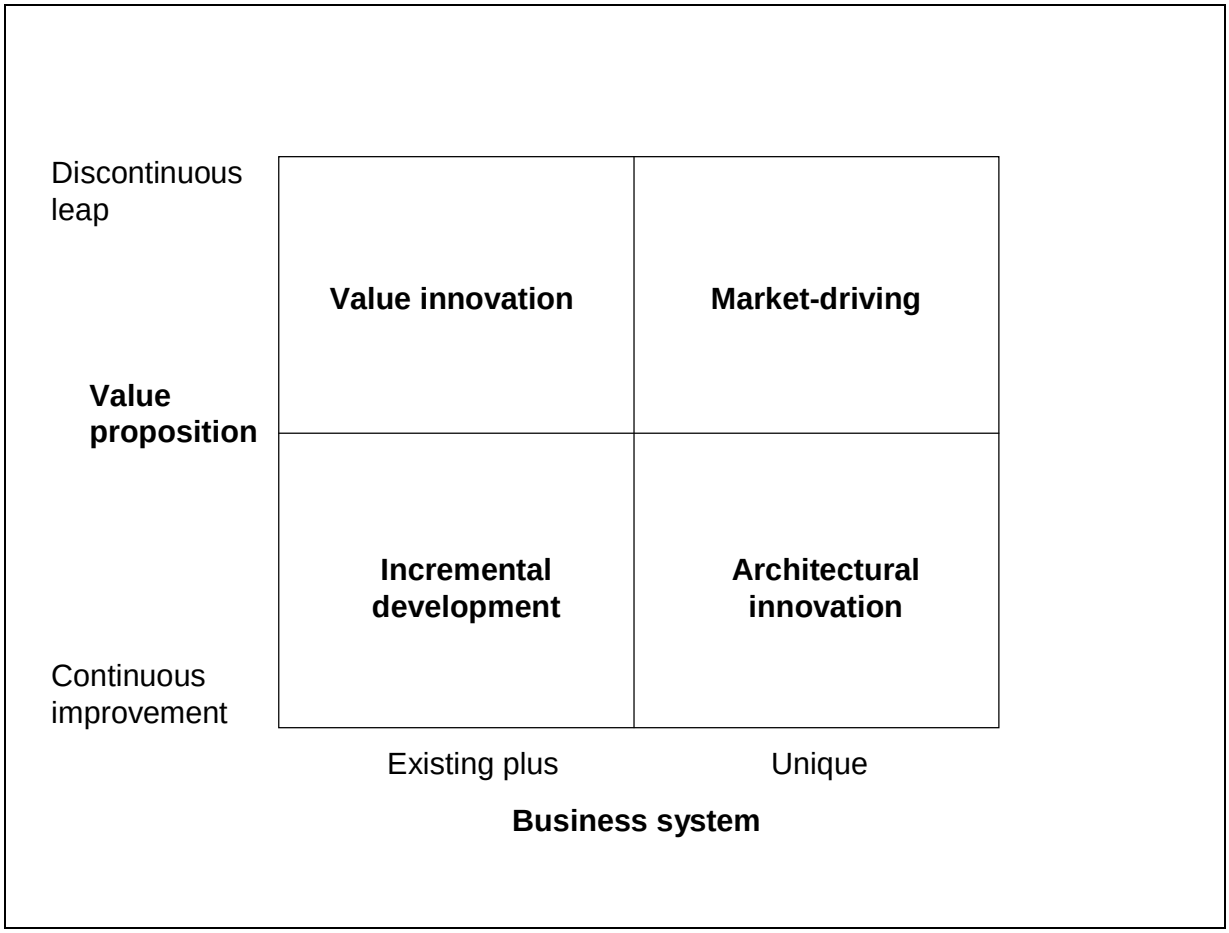
Kumar *et al*. (2000:135) state that market-driving firms are usually new entrants in the market, as they dramatically change existing rules and structures. Larger firms need to overcome several obstacles to become market driving. First, new ideas often

contradict the current business of the organisation. Secondly, high risks, such as financial and personal risk, are involved in developing market-driving ideas. Third, the development of ideas is often biased towards following tried and familiar territory that is in line with the organisation's overall direction. Fourth, more resistance towards breakthrough ideas is experienced if the status quo is at risk of changing (Kumar *et al*., 2000:136).

Established firms which want to become market-driving firms need to establish the vision and environment to generate breakthrough ideas and implement capital and risk tolerance (Kumar *et al*., 2000:136).
Management must set up project teams and encourage a certain type of behaviour, allowing for serendipity, encouraging experimentation and tolerating mistakes. The right employees need to be assigned specifically to the project team and exempted from the existing business structure and priorities. Management needs to establish several channels for approval of new ideas, and new ideas should be allowed to cannibalise existing business (Kumar *et al*., 2000:137-138).

Kumar *et al*. (2000:138-139) state, however, that it is difficult to become a serial market-driving firm, as bureaucracy, standard routines and risk aversion rise the bigger the organisation gets.

FIGURE 3.1: Types of strategic innovation



Source: Kumar *et al*. (2000:130)

The three main points to consider from the analysis of market-driving firms by Kumar *et al*. (2000) are:

- Radical innovation is performed on two dimensions: the value proposition and a unique business system.
- Market-driving firms compete on different levels, such as changing industry segmentation, channel reconfiguration, new price points, providing customer education and exceeding customers' expectations.
- In order to become market driving, firms must create a vision and environment for innovation.

3.3.2 Firm-external dynamics: shaping market structure and behaviour (Jaworski, Kohli & Sahay, 2000)

Jaworski *et al*. (2000:45) state that market-driving behaviour is characterised by influencing the structure of the market and/or the behaviour of its market players with

the goal of enhancing the competitive position of the business. These authors characterise market driving and market driven as being two complementary approaches of the market orientation of a firm.

Market-driven behaviour is characterised by accepting the current structure and/or behaviour of market players and working within those constraints. A market-driving approach aims to change the composition of market players and/or change the behaviour of market players. Market-driving is considered to be a function of the number of changes and the impact of these changes on the market. Market-driving and market-driven behaviour are complementary approaches that can both appear in the same organisation. It is noted that firms which are not the first ones in a market also have the potential to drive the market, as the extent of change is crucial and not necessarily the timing (Jaworski *et al*., 2000:45-47).

Jaworski *et al*. (2000:46-47) provide a conceptual framework that includes market structure and market behaviour. The market structure encompasses all market players in the value chain. A market-driving firm proactively changes the composition and number of market players, or changes the roles of these players by adding new players or making others obsolete. Market behaviour considers the behaviour of all market players, customers, suppliers and competitors. Market-driving firms change customers' perception of the firm's products or shape customers' behaviour by focusing on product attributes that have not been considered before, or by introducing completely new product offerings. The conceptual framework is summarised in Figure 3.2.

Jaworski *et al*. (2000:47) describe three different strategies for shaping the market and/or the behaviour of its players: a deconstruction approach, a construction approach or a functional modification.

A *deconstruction* approach can involve channel reconfiguration, where the firm's business model is built around eliminating players. An elimination of competitors can be achieved by joint ventures and partnerships. Suppliers can also be acquired in order to gain a better cost position (Jaworski *et al*., 2000:48-49).

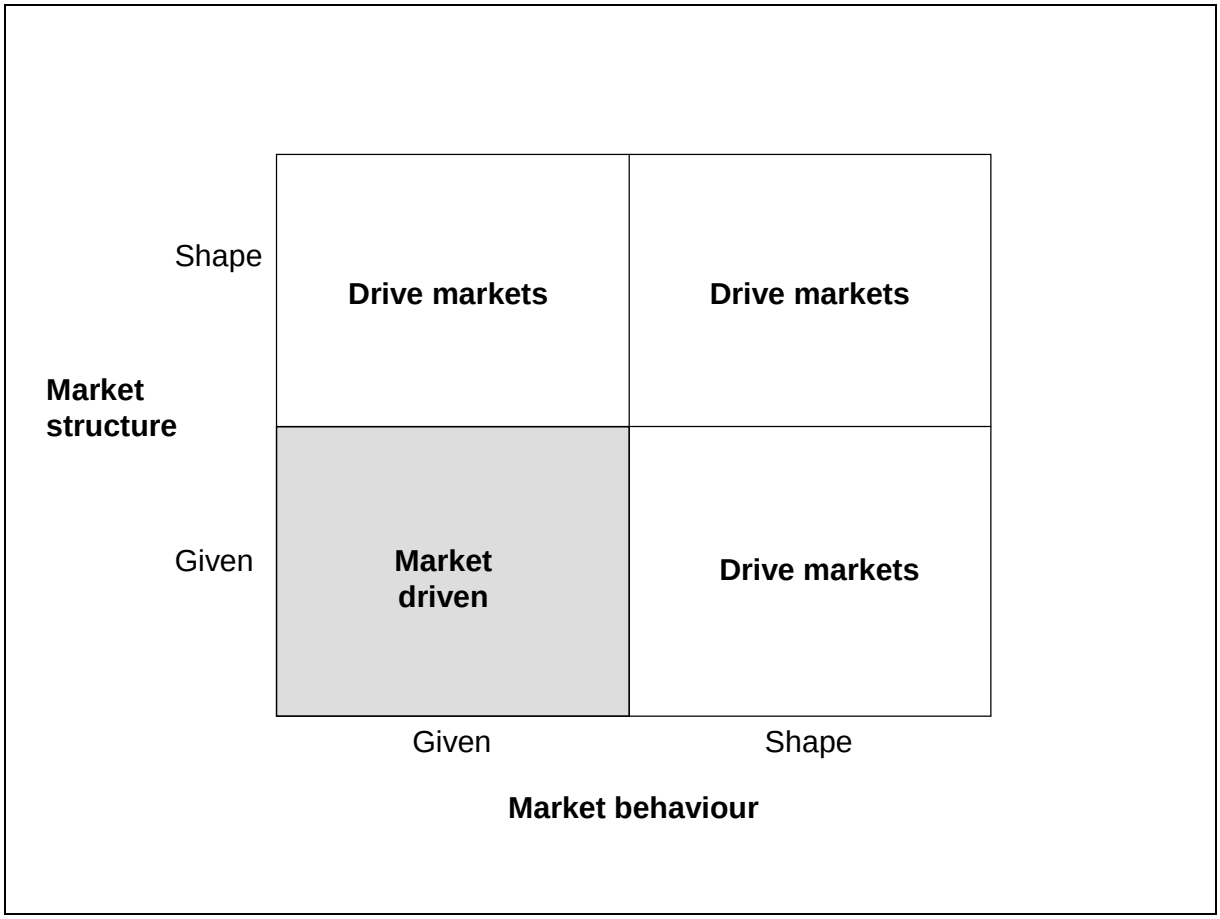
Adding new players to the market represents a *construction* approach. This can be either achieved by building a set of new players or by adding new players to the existing structure (Jaworski *et al*., 2000:49-51).

Functional modification, as a third approach to shaping the market, would include forwards or backwards integration (Jaworski *et al*., 2000:49-51).

Jaworski *et al*. (2000:51) emphasise that shaping the market and its players can be achieved with latent and manifest customer needs in mind. Latent needs refer to needs that are not apparent and as yet unmet in the market.

Market behaviour can be shaped either directly or indirectly. A direct influence on customer and competitor behaviour can be achieved by building or removing constraints. Indirect action can be taken when new customer preferences are created; for example, new benefits can be introduced that have not been recognised before. Another way to indirectly shape customer preferences is to change existing preferences. Previously negative perceptions of a product could be changed into positive perceptions (Jaworski *et al*., 2000:52-53).

FIGURE 3.2: Conceptual framework: two forms of market orientation



Source: Jaworski *et al*. (2000:46)

The main aspects of the concept provided by Jaworski *et al*. (2000) can be summarised as follows:

- Market-driving firms shape market structure by using different approaches: deconstruction, construction and functional modification.
- Market-driving firms shape market behaviour, either directly or indirectly.

3.3.3 Four tenets of market driving (Harris and Cai, 2002)

Harris and Cai (2002:172) built on the market-driving concepts of Kumar *et al*. (2000) and Jaworski *et al*. (2000). A case study with De Beers in China was conducted to elaborate on factors that lead firms into a market-driving approach and how market driving occurs in practice.

Harris and Cai (2002:180-182) found several factors leading to market driving.

First, customer unfamiliarity with the product and preconceptions in new markets require a market-driving approach. The firm explores a new market and tries to transform mental models to build the market to achieve growth (Harris & Cai, 2002:180-182).

Second, market control of a firm puts it in a favourable position to explore new markets where a market-driving approach can be applied. A market-driven approach can be pursued in mature markets (Harris & Cai, 2002:183). It is argued that market control puts De Beers into a position where market structure and behaviour can be shaped. Although De Beers has not totally applied a construction, deconstruction or functional modification approach to the market, as outlined by Jaworski *et al*. (2000), it has influenced the behaviour of customers directly and indirectly by bringing the value perception of diamonds to China (Harris & Cai, 2002:190).

In addition, as market-driving firms change the market, a need arises to also become more market-driven. It is argued that market-driving and market-driven behaviour are sequential processes (Harris & Cai, 2002:184). This finding supports the view of Jaworski *et al*. (2000) that market-driving and market-driven approaches are complementary (Harris & Cai, 2002:184).

Harris and Cai (2002:185) describe four tenets of market-driving: *market sensing*; *changing customer preferences*; *alliance formation;* and *local sensitivity*.

A market-sensing ability is important for a market-driven as well as a market-driving approach. However, market sensing is applied differently in the two approaches. Market-driven firms apply market sensing to generate information, disseminate it and react. Market-driving firms use the information to learn about emerging opportunities and learn how the market may react to strategic moves. Hence, market-driving firms use information to change the market (Harris & Cai, 2002:185). This perspective can be linked to the findings by Kumar *et al.* (2000:132), in that market-driving firms see how the market can evolve (Harris & Cai, 2002:185).

Secondly, firms need to educate their customers about the product, how to use it and create emotional attachment (Harris & Cai, 2002:186-187). This finding is consistent

with the approach of shaping customer preferences directly and indirectly, as presented by Jaworski *et al.* (2000) (Harris & Cai, 2002:185). Kumar *et al.* (2000:134) also consider customer education vital for a market-driving approach.

Thirdly, establishing relationships with suppliers, retailers and regulatory bodies is beneficial in controlling and managing the channels (Harris & Cai, 2002:187-188). Channel reconfiguration is also an important aspect in the works of Jaworski *et al.* (2000) and Kumar *et al.* (2000). Innovative channel management, such as including or excluding other market players, is practised by market-driving firms (Harris & Cai, 2002:188).

Finally, being sensitive to cultural issues while implementing a market-driving approach is considered to be linked to success in that market (Harris & Cai, 2002:189).

Important aspects of the study by Harris and Cai (2002) can be summarised in the following points:

- Partial support for the frameworks presented by Jaworski *et al.* (2000) and Kumar *et al.* (2000) is found.
- Market sensing, changing customer preferences, forming relationships and local sensitivity represent the four tenets of market-driving.

3.3.4 Combining firm-external and firm-internal dynamics (Barlow Hills & Sarin, 2001, 2003)

Market driving is described as consisting of three dimensions: value creation, change and leadership. It is argued that all three dimensions need to be present at the same time to characterise a firm as market driving (Barlow Hills & Sarin, 2003:17).

Value creation refers to an innovative behaviour that includes process innovation, strategy implementation and barriers to entry. Changes in structures and/or behaviour are pursued with different stakeholders such as customers, competitors, suppliers, regulatory agencies and alliance partners. Market-driving firms are also believed to lead other firms into new territory (Barlow Hills & Sarin, 2003:15).

Market-driving firms take into consideration all stakeholders: customers, competitors, alliance partners and channel members, in their strategies to achieve industry change. Market-driven and customer-leading activities focus primarily on the customer (Barlow Hills & Sarin, 2003:17).

Barlow Hills and Sarin (2003:15-16) claim that market driving is not only a multi-dimensional construct but also consists of multiple levels. Depending on the firm's strategic orientation, it can influence the market and its stakeholders on three levels: on an industry, a market or a product level (Barlow Hills & Sarin, 2001:218; 2003:16).

First, market driving can occur on an *industry* level, which refers to a change of the structure and the nature of the competition. Barlow Hills and Sarin (2003:16) refer to Jaworski *et al.* (2000) and state that altering industry scale and the supply chain influences the competitive structure. In the same vein Kumar *et al*. (2000:130) note that the introduction of a unique business system changes the way a firm competes in an industry.

Secondly, on a *market* level firms focus on activities to change customer preferences and behaviour (Barlow Hills & Sarin, 2003:16). By considering various stakeholders, firms can expand their current market and create new markets. Increasing access to products and services out of common time and location principles increases customers' perception of individuality and changes market boundaries (Barlow Hills & Sarin, 2003:16). This approach is also reflected in the findings of Jaworski *et al.* (2000:52), who claim that building or removing customer constraints can be used to shape market behaviour.

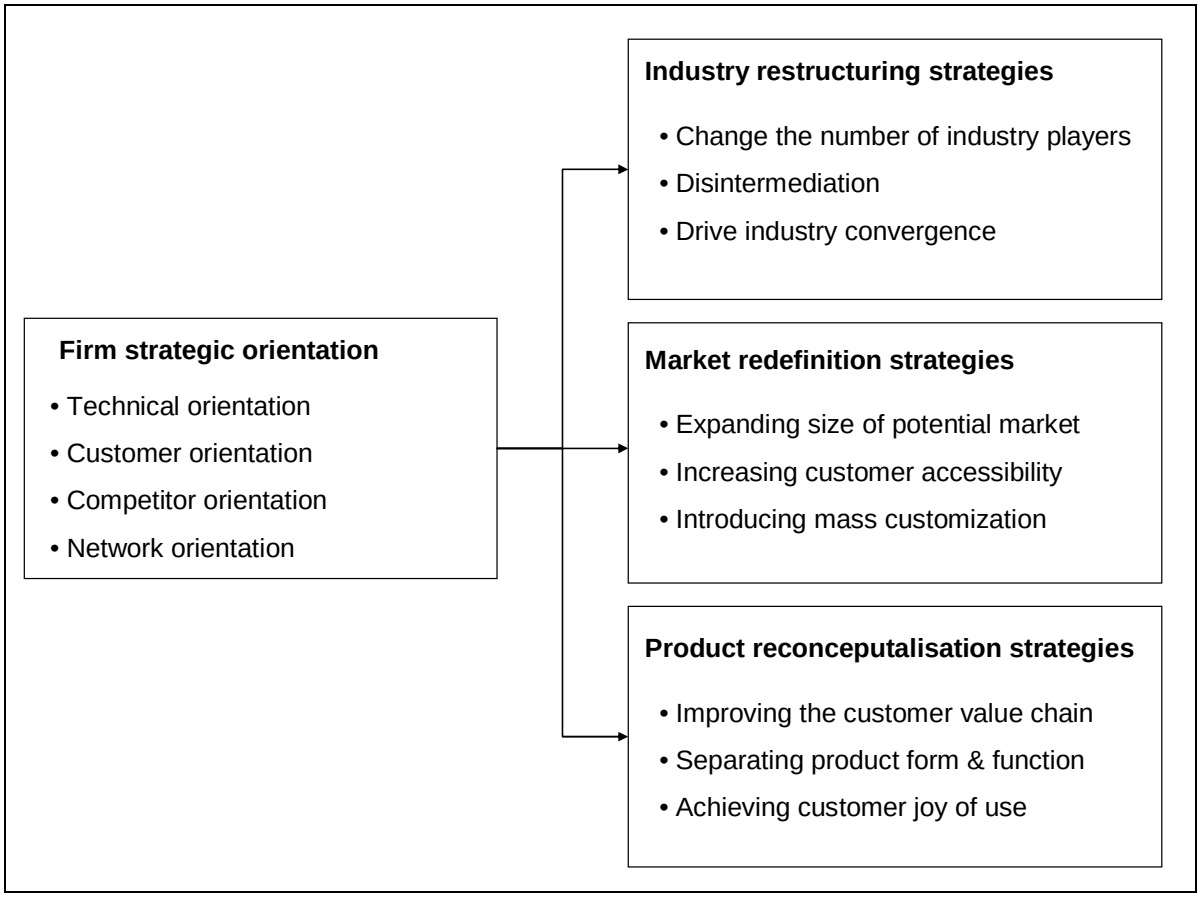
Thirdly, at a *product* level firms aim to change the standards of products and services in a particular market. It is argued that most market-driving activities take place at a product level, where firms modify or improve product features to acquire new customers and change the perceived value of the product (Barlow Hills & Sarin, 2003:17). This perspective corresponds with the findings of Kumar *et al.* (2000:130), who state that a leap in customer value is created when existing technology is exploited to serve the customer in a different way that delivers greater benefit.

A firm's strategic orientation is formed by its capabilities. In order to pursue a market-driving approach on one of these levels, firms need to have certain capabilities. A technical capability refers to a firm's ability to actively create new products and services. A customer capability refers to activities directly related to an understanding of customers' needs and preferences. The degree to which a firm undertakes activities assessing competitors' performance is considered as a competitor capability. A network capability refers to a firm's ability to form strategic alliances and an industry-wide product standard (Barlow Hills & Sarin, 2001:219).

It is argued that these strategic orientations can occur simultaneously in one organisation; however, most often one orientation is more dominant than others. The strategic orientations guide the firm in its market-driving endeavours. Hence firms with a more internal technical orientation will drive the market through product innovations whereas firms with an outside competitor orientation will focus on marketing activities to drive the market (Barlow Hills & Sarin, 2001:219-220).

Figure 3.3 presents the framework suggested by Barlow Hills and Sarin (2001:218).

FIGURE 3.3: Competing values framework



Source: Barlow Hills and Sarin (2001:218)

The main aspects of the research by Barlow Hills and Sarin (2001, 2003) can be summarised as follows:

- Market driving consists of the simultaneous presence of three dimensions: value creation, change and leadership.
- A firm's strategic orientation determines the level on which market driving is pursued.
- Market driving can occur on an industry level, a market level or a product level.

3.3.5 Conceptual framework of market-driving strategy (Carrillat, Jaramillo & Locander, 2004)

Carrillat *et al*. (2004:1) state that market-driving and market-driven behaviour are components of the general framework of market orientation. Their focus is on customer needs and desires as well as profit.

Carrillat *et al*. (2004:2-3) combined previous research on market driving by Kumar *et al*. (2000) and Jaworski *et al.* (2000) to build their conceptual model. They argued that although previous research showed different ways in which to achieve market driving, it did not provide a conceptual model that integrated organisational processes to achieve market driving.

The conceptual model, which is presented in Figure 3.4, describes which organisational processes lead to market driving. It is argued that the realisation of a market-driving strategy is a two-stage process. First, a market-driving culture needs to be created; and second, this culture needs to be implemented (Carrillat *et al.,* 2004:1).

Creating a market-driving culture requires a transformational leadership style. A transformational leadership style needs to align the values and goals of all organisational members. Furthermore, the vision needs to be articulated, which requires strong leadership that leads to an adoption of the goals and a sharing of the vision by all employees. A transformational leadership also requires the implementation of different strategies to create an atmosphere where market driving can flourish. Carrillat *et al*. (2004:4-5) adopted the following strategies from Kumar *et al*. (2000):

- Allow space for serendipity.
- Select and retain creative employees.
- Empower entrepreneurial employees.
- Establish competitive teams.
- Favour new ideas – cannibalise your own products.
- Encourage experimentation and tolerate mistakes.

The outcome of a transformational leadership style is a change in an organisation's culture towards market driving (Carrillat *et al*., 2004:5).

Organisational culture can be determined in two dimensions: first, the degree of structure, which varies from informal to formal; second, an internal-external perspective which considers the development of internal systems as well as the development of competitive advantage (Carrillat *et al.,* 2004:5).

It is argued that for the creation of a market-driving culture an adhocracy type of leadership is most suitable, whereas for the implementation a market type culture is beneficial. Adhocracy cultures are described as being supportive of risk-taking, creativity and innovative behaviour. The main focus is on an external perspective and informal structures within the organisation. A market type culture focuses on the implementation of innovations. It relies on well-defined formal goals as well as formal information systems and inter-functional coordination to continuously monitor the market and understand customer needs (Carrillat *et al*., 2004:5-6).

The capacity to innovate is influenced by the firm's propensity for risk-taking, innovativeness and organisational learning. Risk-taking refers to undertaking actions that could potentially result in a loss. In order to build a market-driving culture innovativeness is required. Furthermore, interactive organisational learning, which takes place as a two-way process, will decrease the risk of failure. First, the firm learns from its environment and later the environment learns from the firm. Through interactive learning the firm is in a better position to launch new products (Carrillat *et al*., 2004:6).

In the transitional phase two concepts are important. First, organisational change needs to be supported and initiated by senior management. It is important that top management adopts the market-driving culture in order for middle and junior management to follow. Second, inter-functional coordination of all departments is required to implement organisational changes (Carrillat *et al*., 2004:7).

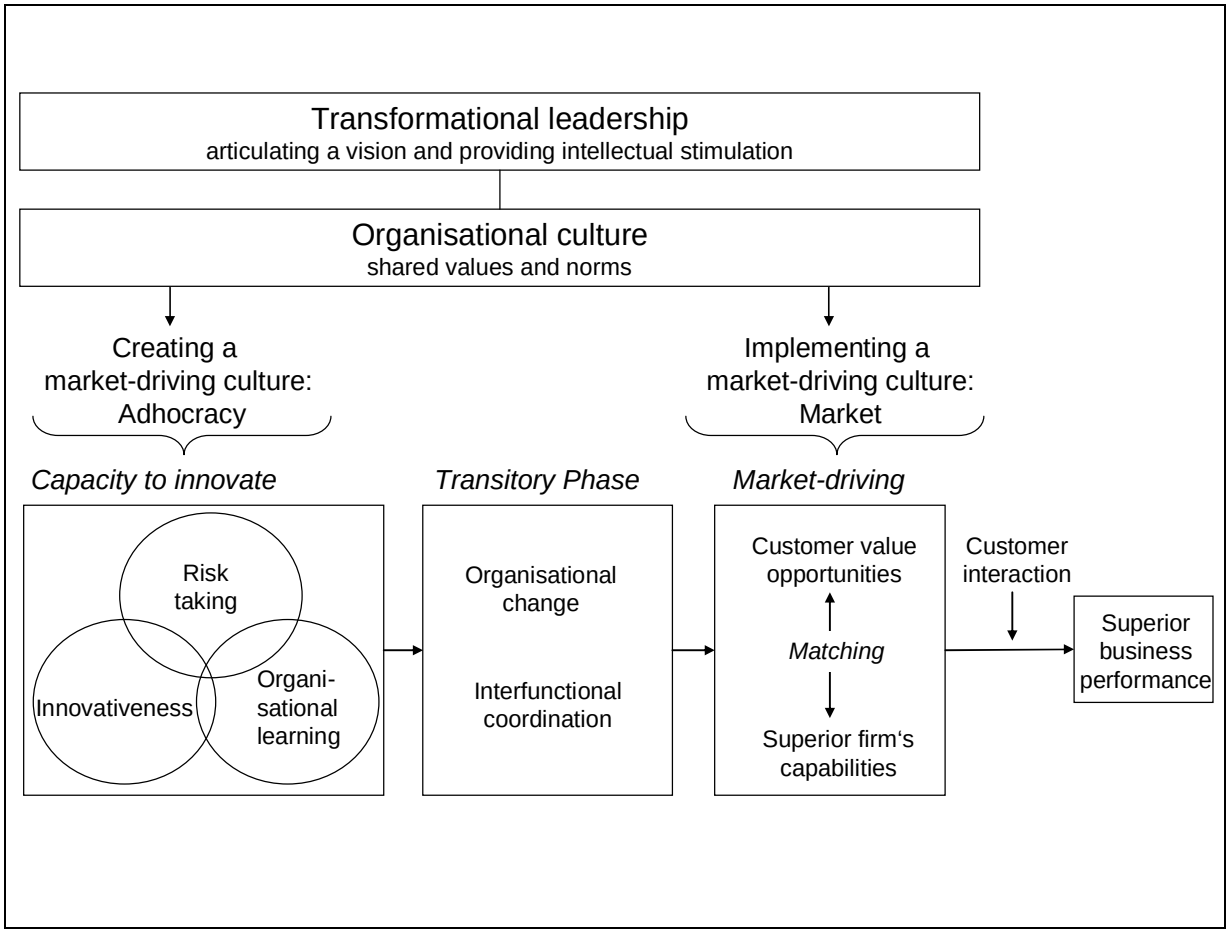
The final step in the process is the implementation of market driving. For that purpose Carrillat *et al*. (2004:8) apply an internal perspective adopted from the

research conducted by Kumar *et al.* (2000) and an external perspective representing the thoughts of Jaworski *et al.* (2000).
It is argued that creating a radical innovation initiates a leap in customer value and a unique business system. These result in the creation of barriers to entry for competitors (Carrillat *et al.,* 2004:8).

The external perspective considers that market-driving firms are able to shape the structure and behaviour of market players by adopting one of the following approaches: construction, deconstruction or functional modification. As outlined, behaviour can be influenced directly or indirectly (Carrillat *et al.,* 2004:8).
Therefore market-driving firms not only match their capabilities to customer value opportunities but also strive to create innovations that allow them to drive the market into different territories (Carrillat *et al.,* 2004:8).

Market driving results in superior business performance. Carrillat *et al.* (2004:9) add that market driving works better in service industries than in manufacturing industries, because of higher customer interaction effects.

FIGURE 3.4: A conceptual framework of market-driving strategy



Source: Carrillat *et al.* (2004:3)

The main aspects of the conceptual model by Carrillat *et al.* (2004) are:

- Antecedents to market driving are: transformational leadership style, organisational culture, capacity to innovate, organisational change and inter-functional coordination.
- Market driving occurs on a firm-internal and firm-external level.
- Market driving results in superior business performance.

3.3.6 Developing supplier relationships to support market-driving strategy (Ghauri, Tarnovskaya & Elg, 2008)

Ghauri *et al.* (2008:504) build on research conducted by Kumar *et al.* (2000) and Jaworski *et al.* (2000). It is argued that market driving is an ability of firms to create a leap in customer value by redefining internal business processes and restructuring

activities in the value chain. In order to achieve market driving, firms need innovation and supplier relationships (Ghauri *et al.,* 2008:504).

The main focus of the study presented by Ghauri *et al.* (2008:505) is how firms can mobilise their suppliers to create a leap in customer value by changing customer behaviour and the market structure in general.

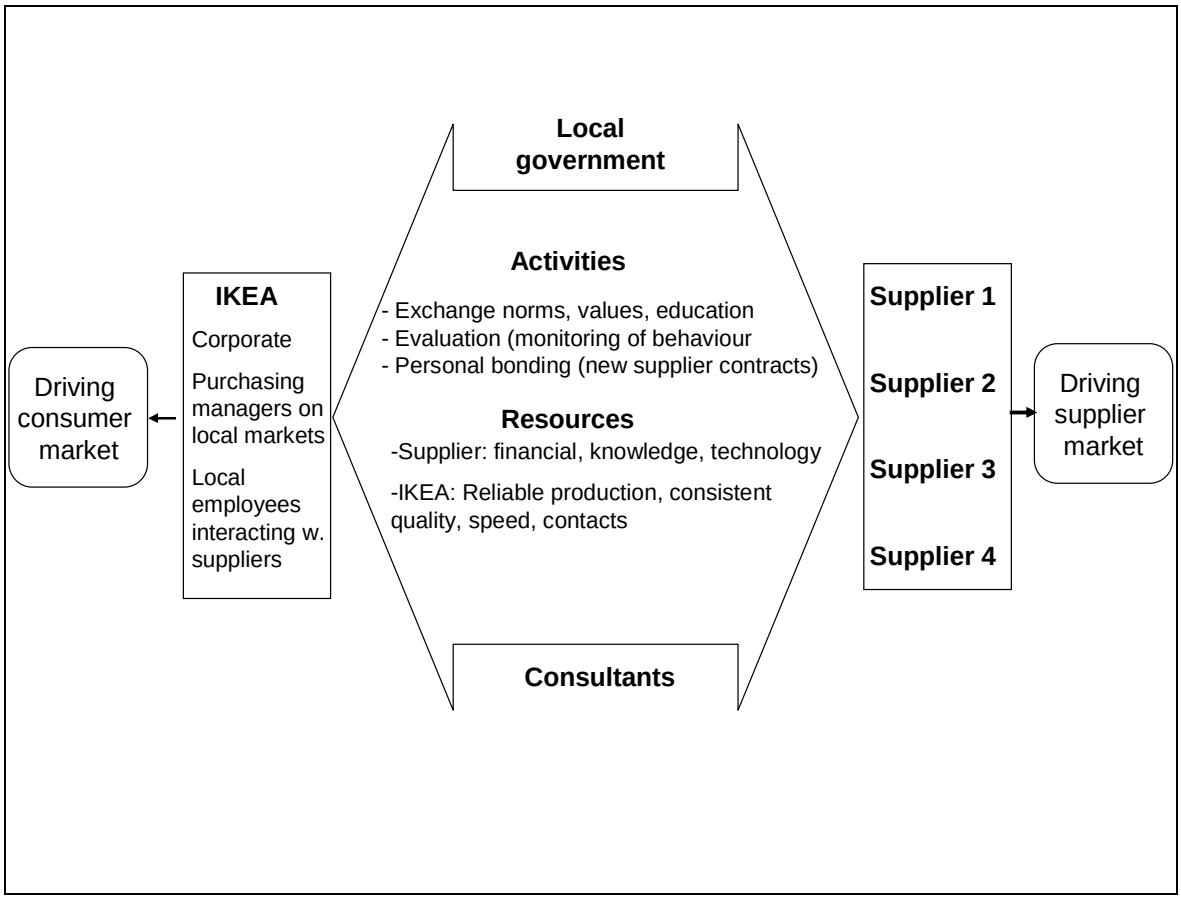
Ghauri *et al.* (2008:506-507) conducted a qualitative case study with Ikea in which a network approach was used to analyse Ikea's relationships with its suppliers. The network approach includes an analysis of actors, activities and resources. First, the roles of different actors and the relationships between them are analysed. "Activities" refers to performed tasks and "resources" focuses on exchange of resources. By exchanging critical resources, value can be generated.

Regarding the activities perspective of the approach, it was found that the development of personal relationships with suppliers and a common understanding of the vision of the business are typical of market driving. Furthermore, shared norms and standards are established, which increases involvement of workers.

Resources, exchanging technologies and Ikea's financial support for the factories were considered to improve working conditions and safety standards.
Ikea's close relationship with its suppliers is considered to be the key to its market-driving success. This requires the management from both organisations to be involved in the development of these relationships (Ghauri *et al.,* 2008:512-515).

The conceptual model of a market-driving firm and its relationship with suppliers is presented in Figure 3.5.

FIGURE 3.5: A conceptual model of a market-driving firm and its relationship with suppliers



Source: Ghauri *et al.* (2008:514).

The main findings of the research conducted by Ghauri *et al.* (2008) can be summarised as follows:

- Market-driving firms create strong relationships with suppliers.
- Market-driving firms share norms and vision with suppliers.
- Market-driving firms exchange resources, such as technologies and knowledge, with their suppliers.

3.3.7 Integrative model of sustainable advantage (Schindehutte, Morris & Kocak, 2008)

Schindehutte *et al*. (2008:4,7) argue that market-driving behaviour is distinct from a market orientation. Market driving focuses on the entire range of market players, and is not limited to the beginning of a technology life cycle.

These authors argue that firms can be characterised by the following four positions. First, firms may be neither market driven nor market driving. Second, firms may be either market driven or market driving. Third, firms can be sequentially market driving and then market driven, and fourth, they can rarely be market driven and predominantly market driving (Schindehutte *et al.,* 2008:8).

Schindehutte *et al.* (2008:12) propose an integrative model that represents a process and content perspective of the marketing and entrepreneurship interface towards achieving a sustainable competitive advantage. Further, it is argued that market driving is an outcome of innovation. Figure 3.6 presents the integrative model. Dark shaded boxes refer to constructs related to an entrepreneurial orientation and white boxes refer to marketing constructs (Schindehutte *et al*., 2008:12).

The antecedents of the model are represented by environmental/market factors and firm-specific factors. These factors, combined with strategic orientations of the firm represented by market, technology and entrepreneurial orientation, drive the type and nature of innovations. It is noted that the innovation has an important role in the process, as several types of innovation can lead to market-driving behaviour (Schindehutte *et al*., 2008:13-14).

Mediating processes of organisational learning and opportunity recognition occur simultaneously. A firm learns from its environment how to compete in an existing market by responding to market needs. However, opportunity discovery enables the firm to find out about new needs and the process whereby the necessary resources are required to achieve a competitive advantage and superior financial performance (Schindehutte *et al.,* 2008:13,15).

The model presented by Schindehutte *et al*. (2008:16) also includes path-dependent trajectories. The two preconditions for the model are that entrepreneurial orientation is dynamic and the environment in which firms operate is moderately or highly turbulent. Four basic situations arise.

First, firms can start with a strong internal orientation focusing on production or financial management. The survival of the firm will depend on the level of

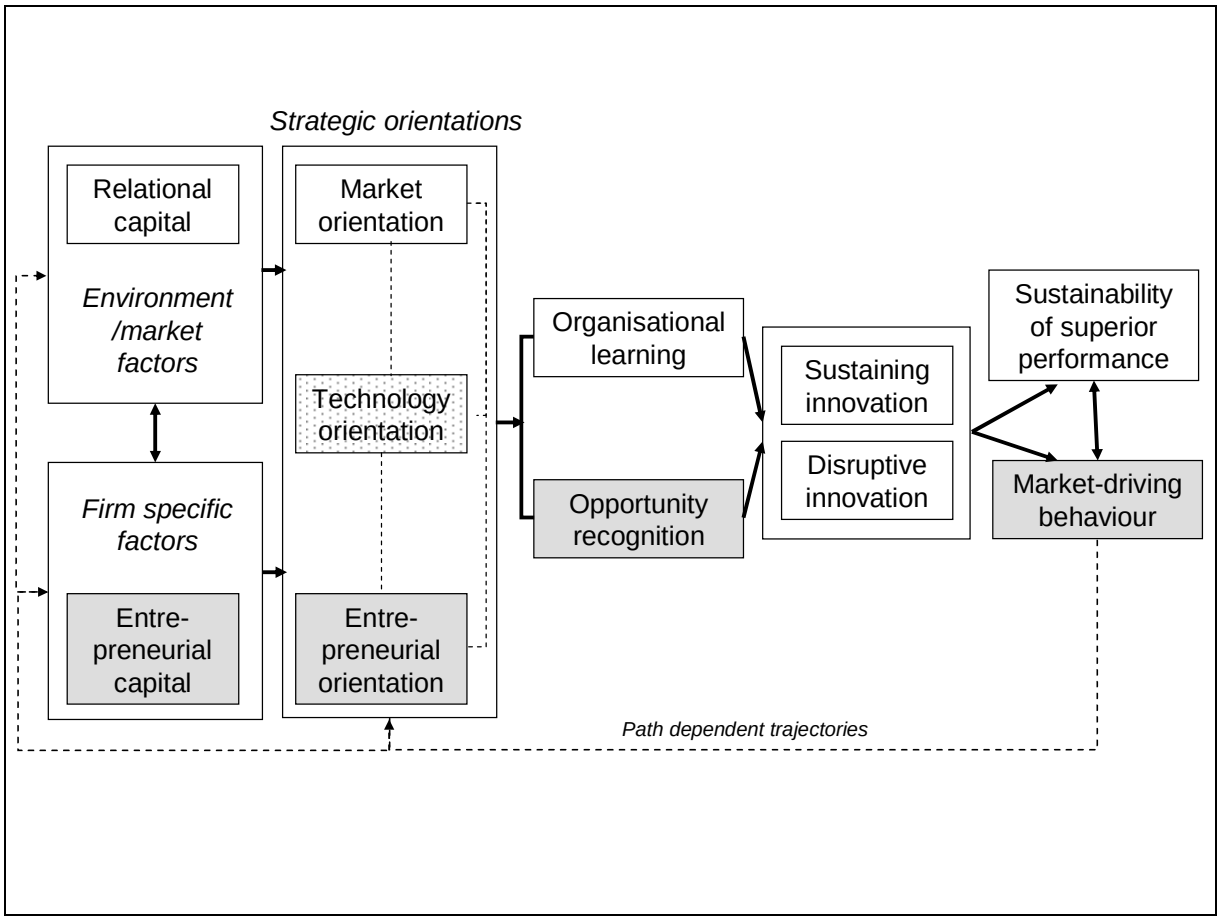
entrepreneurial orientation in order to make the transition to becoming more market driven (either reactive or proactive) or customer oriented (Schindehutte *et al*., 2008:16).

Second, firms can focus on a technological orientation. If at least a moderate level of entrepreneurial orientation is present, the firm can transform into a proactive market-driven firm (Schindehutte *et al*., 2008:16).

Third, a firm can start as market driven (reactive or proactive) and if this is combined with a moderate level of entrepreneurial orientation it can be successful over time (Schindehutte *et al*., 2008:16).

Fourth, a firm may be market driving in the beginning, which requires a high level of entrepreneurial orientation. A transformation into market-driven behaviour with moderate levels of entrepreneurial orientation will follow. It is possible for the firm to rotate between market-driving and market-driven phases (Schindehutte *et al*., 2008:16).

FIGURE 3.6: Integrative model of how sustainable advantages evolve through path-dependent trajectories



Source: Schindehutte *et al.* (2008:13)

The main aspects of the integrative model by Schindehutte *et al*. (2008) can be summarised as follows:

- Antecedents to market driving derive from two dimensions: environmental factors and firm-specific factors.
- A combination of different strategic orientations and organisational learning and opportunity recognition results in innovation.
- Different types of innovation offer an opportunity for market-driving behaviour that results in superior performance.

3.4 SUMMARY OF MARKET-DRIVING CONCEPTS AND FRAMEWORKS

The presented models can be summarised from three different aspects. First, what market-driving is; second, which factors influence the market-driving ability of firms; and third, the outcomes of market driving.

Market driving has been presented as a specific firm behaviour to shape the market structure and/or behaviour of all stakeholders (customers, competitors, suppliers and regulatory bodies). Certain abilities such as market sensing, changing of customer preferences, forming alliances, networks and local sensitivity characterise market-driving behaviour. Finally, market-driving can be undertaken on an industry, a market or a product level (Barlow Hills & Sarin, 2001, 2003; Ghauri *et al*., 2008; Harris & Cai, 2002; Jaworski *et al*., 2000).

Factors that influence market-driving ability can be summarised under an entrepreneurial and a market orientation. Organisational characteristics are important factors in facilitating market driving (Barlow Hills & Sarin, 2001, 2003; Carrillat *et al*., 2004; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al*., 2000; Schindehutte *et al*., 2008).

Existing organisations need to create an enabling environment in order to achieve market-driving (Barlow Hills & Sarin, 2003; Carrillat *et al.,* 2004; Kumar *et al.,* 2000; Schindehutte *et al.,* 2008).

The outcomes of market-driving have been described as superior business performance and competitive advantage (Barlow Hills & Sarin, 2001; Carrillat *et al*., 2004; Schindehutte *et al*., 2008).

Market driving can occur together with other strategic orientations such as market-driven behaviour in a firm; however, orientations alternate in that one orientation is more dominant than the others at a certain time (Barlow Hills & Sarin, 2001; Harris & Cai, 2002; Jaworski *et al*., 2000; Schindehutte *et al*., 2008).

Table 3.2 summarises the presented concepts and frameworks.

TABLE 3.2: Overview of market-driving concepts and frameworks

Author	Year	Definition of market driving	What market driving firms do	How firms can become market driving	Outcomes of market driving	Study approach
Jaworski, Kohli & Sahay	2000	- Influencing structures of the market and/or - behaviours of market players	3 general approaches to shaping the market: construction, deconstruction, functional modification Shape market behaviour directly and indirectly	- Focus on structure and behaviour - Balance market-driven and market-driving markets	Competitive advantage	Secondary research
Kumar, Scheer & Kotler	2000	Radical innovation in: - Creation of leap in value proposition - Implementing unique business system	- Opportunity driven - Redraw industry segmentation - Create new price points - Customer education - Channel reconfiguration - Overwhelm customer expectations	- Mostly new entrants to the market - Established firms must have: vision, environment, capital and risk-tolerance	Competitive advantage	In-depth qualitative interviews, n=25 with market-driving firms

TABLE 3.2: **Overview of market-driving concepts and frameworks - continued**

Author	Year	Definition of market driving	What market driving firms do	How firms can become market driving	Outcomes of market driving	Study approach
Harris & Cai	2002	Reshape, educate and lead the customer / the market [definition adopted from Jaworski *et al.* (2000); Kumar *et al*. (2000)]	- Shift consumer preferences - Build demand and transform mental models - Control the market - Pursue activities in selected markets	- Market sensing - Changing customer preferences - Alliance formation - Local sensitivity	Performance	Case study; De Beers in China
Barlow Hills & Sarin	2001, 2003	-Value-creation -Change -Leadership all three elements to be present simultaneously	- Include various stakeholders - Seek industry change through changes at product / market level	- Proactively develop inter-firm networks	Short and long-term performance	Secondary research using the high-technology industry

TABLE 3.2: **Overview of market-driving concepts and frameworks - continued**

Author	Year	Definition of market driving	What market driving firms do	How firms can become market driving	Outcomes of market driving	Study approach
Carrillat, Jaramillo, Locander	2004	- Change the market - Propose offerings that are more valued by customer [definition adopted from Jaworski *et al*. (2000) and Kumar *et al*. (2000)]	- Use transformational leadership to create market-driving culture - Culture fostering: risk-taking, innovativeness, organisational learning	- Create a market-driving culture - Implement that culture	Superior performance: financial performance, customer perceptions	Secondary research
Ghauri, Tarnovskaya & Elg	2008	- Innovative restructuring the value chain - Build strong supplier relationships [definition adopted from Jaworski *et al*. (2000) and Kumar *et al*. (2000)]	- Exchange norms, values - Education (management) - Evaluation (monitoring behaviour) - Personal bonding	- Build strong relationships with suppliers	Create leap in customer value	Case study; n=1

TABLE 3.2: **Overview of market-driving concepts and frameworks - continued**

Author	Year	Definition of market driving	What market driving firms do	How firms can become market driving	Outcomes of market driving	Study Approach
Schindehutte, Morris & Kocak	2008	- Is the essence of entrepreneurial action - Dynamic advantage-creating capability - Reflects strong entrepreneurial orientation	Innovation activities occur at higher frequencies and greater disruptive force	Build an integrative model consisting of: - Industry specific factors - Firm specific factors with - Strategic orientations: entrepreneurial, marketing, technology orientation	Sustainable competitive advantage. Superior long-term performance	Case study; n=2

Sources: Barlow Hills & Sarin (2001, 2003); Carrillat *et al*. (2004); Ghauri *et al*. (2008); Harris & Cai (2002); Jaworski *et al*. (2000); Kumar *et al*. (2000); Schindehutte *et al*. (2008)

3.5 DEFINING MARKET DRIVING

Various researchers have tried to define market driving. The initial point for a definition of market driving was made by Jaworski *et al.* (2000) and Kumar *et al.* (2000). Subsequent research usually adopted their definition and added other perspectives. The following paragraphs outline the various definitions. A definition that is applied for this study will be given.

Kumar *et al*. (2000:131) define market-driving firms as firms that "… trigger industry breakpoints … which change the fundamentals of the industry through radical business innovation. Second, … the inspiration for the radical business concept usually comes from a visionary. Third, … they have to teach potential customers to consume their discontinuous value proposition."

Jaworski *et al*. (2000:47) state that market driving "… refers to changing the composition and/or roles of players in a market and/or the behaviour(s) of players in the market …".

Harris and Cai (2002:173) contend that a market-driving approach is a "… more proactive approach to reshape, educate and lead the customer, or more generally, the market".

Barlow Hills and Sarin (2003:17) define market driving as "… a firm's ability to lead fundamental changes in the evolution of industry conditions by influencing the value creation process at the product, market or industry levels [sic]".

Carrillat *et al*. (2004:2) build on the definitions provided by Kumar *et al*. (2000) and Jaworski *et al*. (2000). Carrillat *et al*. (2004:2) state "Market-driving organizations may achieve greater performance than market-driven organizations by reshaping the structure of the market according to their own competencies and by exploiting competitor's weakness."

Ghauri *et al*. (2008:505) argue that market driving requires supplier relationships and describe the concept as "… a proactive approach of a firm to its supplier

relationships, with the goal of mobilizing suppliers in creating a leap in customer value, and in influencing the customer's behaviour and the market structure in general".

Schindehutte *et al*. (2008:5) state that "… market-driving is a dynamic advantage-creating capability and a disruptive advantage-destroying performance outcome, and that [sic] it reflects a strong entrepreneurial orientation …".

For the purpose of this study the following definition of market-driving is applied; it represents a synthesis of the definitions presented above. The market-driving ability of a firm is characterised by a dynamic capability that consists of various interconnected firm-internal activities that aim to shape, change or create new structures and/or behaviour of market players. Market-driving ability is influenced by a firm's approach to entrepreneurial, market and organisational behaviour. The outcomes of a market-driving behaviour are superior firm performance and relative competitive strength.

3.6 SUGGESTIONS FOR MARKET-DRIVING RESEARCH

Researchers claim that the construct of market driving is not well understood. Hence, several future avenues to investigate market-driving behaviour were pointed out.

The suggestions emphasise the need for developing a measure of market driving and the identification of factors that influence the capability to become market driving.

- Develop frameworks that capture market driving (Schindehutte *et al*., 2008:22).
- Develop an approach to measure market-driving behaviour (Barlow Hills & Sarin, 2003:21; Carrillat *et al*., 2004:10; Jaworski *et al*., 2000:53).
- Identify which organisational factors facilitate or hinder the firm in becoming market driving (Barlow Hills & Sarin, 2003:21; Schindehutte *et al*., 2008:22)
- Investigate whether large organizations are better equipped to conduct market-driving (Jaworski *et al*., 2000:53).

- Investigate market-driving behaviour in a competitive environment (Harris & Cai, 2002:193).
- Identify and measure market-driving outcomes, e.g. performance, competitive advantage (Barlow Hills & Sarin, 2003:21; Schindehutte *et al*., 2008:22).
- Investigate whether market behaviour can be shaped (Jaworski *et al*., 2000:53).

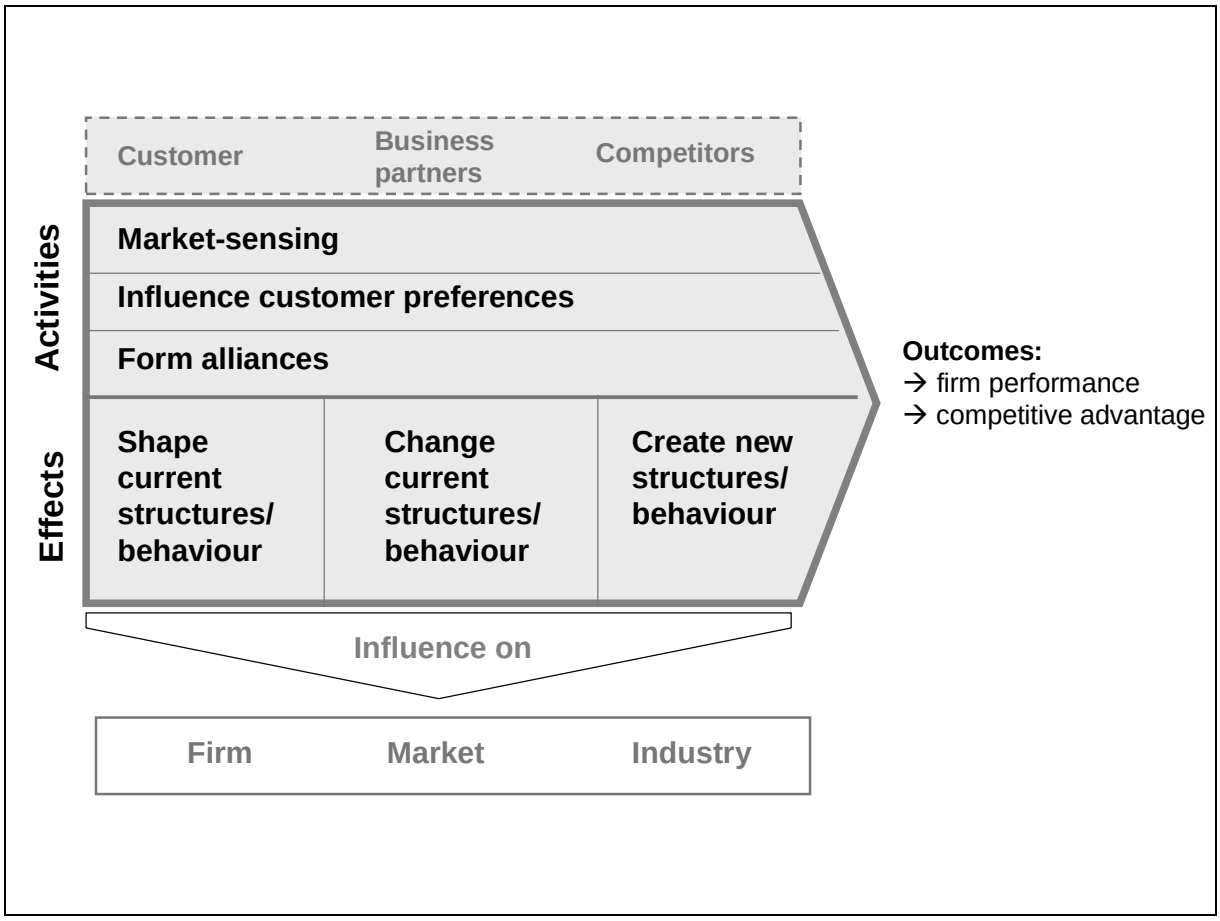
The conceptual framework which is presented in the following paragraphs addresses the need to develop a measurement model for market driving and an understanding of firm-internal factors that facilitate or hinder the ability to become market driving.

3.7 BUILDING THE CONCEPTUAL MODEL OF MARKET-DRIVING ABILITY IN CORPORATE ENTREPRENEURSHIP

Considering the literature on market driving, a new conceptual framework is developed. The purpose of the conceptual model that is transferred into a measurement model is to, firstly, measure market driving; secondly determine which competencies at a firm-internal level are required to achieve market-driving ability; and thirdly, to determine the influence of market-driving ability on competitive advantage and firm performance.

In order to build the conceptual framework for market-driving ability in corporate entrepreneurship, a broader framework is presented that provides a general understanding of market driving for this study (Figure 3.7).

FIGURE 3.7: General framework for market-driving ability in corporate entrepreneurship



Source: Author's own compilation

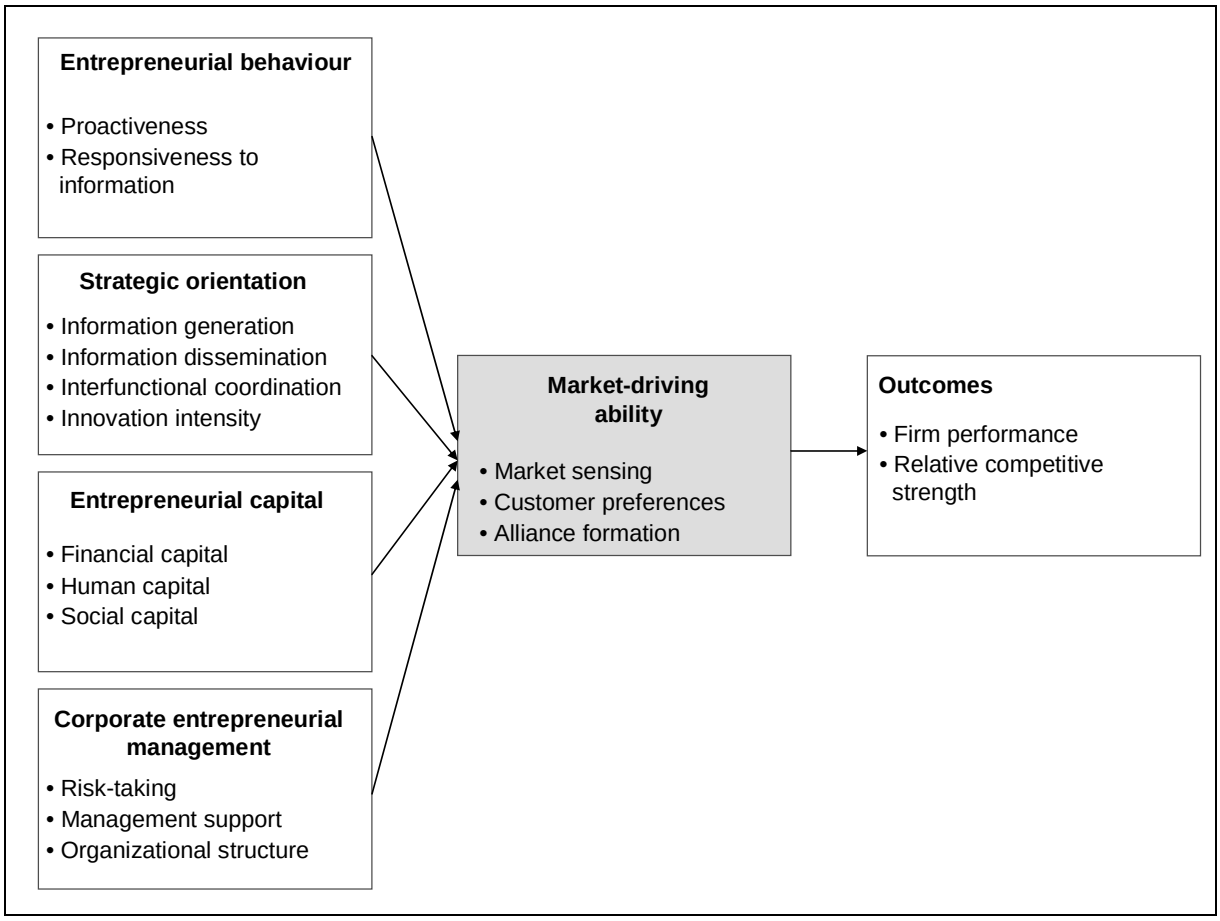
Depending on the firm's overall strategy regarding corporate entrepreneurship, certain capabilities should be developed and supported in an organisation to achieve its goals.

Increasing a firm's market-driving ability can be such a goal. Market-driving is an ability that becomes apparent by performing a combination of different activities that target various stakeholders, such as customers, business partners or competitors.

If the combination of market-driving activities leads to shaping, changing and creating structures and/or behaviour, then firms can be considered market driving. These changes in structures and/or behaviour impact on the firm itself, the market or the entire industry. The outcomes of market-driving ability in corporate entrepreneurship are superior firm performance and competitive advantage.

However, in order to pursue market-driving activities and the ability to shape, change and create structures and/or behaviours, firms need to demonstrate certain capabilities. The following paragraphs outline the conceptual model of market-driving ability, antecedents and outcomes of market driving (Figure 3.8).

FIGURE 3.8: Conceptual model of market-driving ability in corporate entrepreneurship



Source: Author's own compilation

3.7.1 Market-driving elements

For the purpose of this study, market driving is considered to be a multidimensional construct. In order to measure market driving, three activities are considered: market sensing, influencing customer preferences and alliance formation. These activities need to be performed across the organisation and by all departments.

3.7.1.1 Market sensing

Environmental scanning activities enable the firm to learn about future events and trends in order to increase opportunity recognition and reduce uncertainty to a certain level (Barringer & Bluedorn, 1999:423).

Harris and Cai (2002:185) state that market sensing is different when approached from a market-driving perspective compared to a market-driven perspective. In a market-driven perspective it is used to react to changes in the market. On the other hand, market sensing, when conducted in a market-driving approach, refers to understanding and learning about the market in order to change it.

For the purpose of this study, market sensing refers to activities geared at a forward-looking approach that is applied within the organisation and the market with its various stakeholders.

3.7.1.2 Customer preferences

Another aspect of market driving is to actively change and shape behaviour of stakeholders.

Kumar *et al*. (2000:130,135) describe the shaping of preferences as creating a leap in value proposition, which is achieved by overwhelming customers with product offers or services that they did not expect. For that purpose, it is also necessary to educate the customer about new products and offerings.

Jaworski *et al*. (2000:52-53) state that customer behaviour can be shaped. First, existing benefits that customers did not recognise before can be made more obvious. Second, completely new benefits can be introduced. Both approaches target the creation of new customer preferences. Another approach is to change existing negative perceptions into a positive perception of the product or service.

Harris and Cai (2002:186) also find that in order to change customer preferences, rational customer education needs first to take place, followed by subjective information to achieve emotional attachment.

For the purpose of this study, influencing customer preferences refers to delivering exceptional value, changing customer preferences and providing information on new products and services.

3.7.1.3 Alliance formation

Entering new markets can be achieved with the assistance of alliance partners.

Alliances are "… voluntary arrangements between firms involving exchange, sharing or co-development of products, technologies or service" (Gulati, 1998:293).

The formation of alliances is an important aspect of shaping, changing or creating the market and its stakeholders.

Harris and Cai (2002:187-188) state that in order to control channels it is important to establish beneficial relationships with various stakeholders.
Alliances have been shown to positively influence new product development as well as the identification of new opportunities (Baron & Markman, 2000:111; Deeds & Hill 1996:41; Gulati, 1999:399). In addition, they can help to obtain resources and capabilities from external sources (Teng & Cummings, 2002:86).

Firms enter into alliances in order to address their needs and at the same time try to reduce moral hazards. In order to reduce the risk of moral hazards, firms need to have information about their potential partners. This information is often obtained from the social networks that a firm has (Gulati, 1999:399-400).

Several factors that influence the likelihood and success of establishing strategic alliances have been investigated. It was found that the likelihood of entering into new alliances is influenced by the amount of network resources. Network resources are described as the extent of information that is available to the firm due to its position

within networks. The number of new alliances that are entered into depends on past experiences with alliances and also whether high levels of trust and cooperation have been established. The number of alliances a firm engages in also depends on the capabilities it has acquired in forming alliances (Baron & Markman, 2000:111; Gulati 1999:405,413; Ireland, Hitt & Vaidyanath, 2002:413).

For the purpose of this study, strategic alliances refer to cooperative agreements where firms jointly work on product/service development or marketing strategies/activities.

The following paragraphs outline the firm-internal antecedents to market-driving ability.

3.7.2 Firm-internal factors influencing market-driving ability

For the purpose of this study, a market-driving ability is described by various firm-internal antecedents.

In the literature, competencies are described as building blocks of firm performance, representing bundles of skills and resources. To achieve firm performance, competencies need to have value in the market (Harmsen & Jensen, 2004:533,535). As market-driving ability has been described as a process of value creation (Kumar *et al*., 2000), firms need to determine which firm-internal factors contribute to achieving market-driving ability.

Previous research has considered entrepreneurial and market oriented and organisational factors to explain market-driving ability of firms.

The following sections present the constructs and concepts that will be used in this study.

3.7.2.1 Corporate entrepreneurial management

It has been argued that becoming more market driving is more difficult for existing organisations, as their whole structure and behaviour are aligned to preserving the status quo (Kumar *et al.,* 2000:136).

Organisational factors such as management support and commitment, risk-taking and an organisational structure that allows for a flow of communication, easy decision-making processes and a moderate amount of hierarchy levels have been shown to be beneficial in achieving firm performance (Holt *et al.,* 2007; Hornsby *et al*., 1993; Khandwalla 1976/77; Kuratko *et al*., 1993; Kuratko *et al*., 2004).

For the purpose of this study the construct of **corporate entrepreneurial management** will be formed by risk-taking, management support and a flat organisational structure.

3.7.2.2 Entrepreneurial capital

New developments require financial resources in order to promote the innovation process (Miller & Friesen, 1982:4). Furthermore, human and social capital are important factors for the creation of new products or markets and the achievement of firm performance and competitive advantage (Schindehutte *et al.,* 2008:11).

Resources can be tangible and intangible. Tangible resources include resources such as buildings and financial capital. Intangible resources consider human and social capital (Hitt, Bierman, Shimizu & Kochhar, 2001:13; Hitt & Ireland, 2002:3).

Intangible resources are difficult to imitate by competitors and hence provide a source of competitive advantage (Hitt *et al*., 2001:13; Hitt & Ireland, 2002:4; Rauch *et al*., 2005:683).

Human capital, which includes attributes such as education, experience and skills, is considered to be a critical factor in achieving firm success (Hitt *et al*., 2001:14; Hitt & Ireland, 2002:4; Rauch *et al*., 2005:682). Firms try to generate, leverage and protect

knowledge. Knowledge can be gained through formal education and also through learning on the job (Hitt *et al*., 2001:14). Knowledge in a strategy context refers to market knowledge about customers and competitors or knowledge that is relevant for product innovation (Wright, Dunford & Snell, 2001:713). Employees' capabilities are developed in the organisation and include processes such as cooperation, participation and development (Rauch *et al*., 2005:683).

Individuals' social capital can be described as their ability to obtain necessary resources, such as information, and receive increased trust and cooperation from others (Baron & Markman, 2000:107; De Carolis, Litzky & Eddleston, 2009:529). Baron and Markman (2000:107), indicate that social capital is the result of social skills, such as interacting effectively with others. This is also described as networking, which is "… defined as the process of sharing contacts and obtaining resources …" (Sawyer & McGee, 1999).

For the purpose of this study the construct **entrepreneurial capital** will be formed by financial, human and social capital.

3.7.2.3 Strategic orientation

In general a business strategy describes how a firm decides to compete in an industry and how certain performance outcomes will be achieved. The strategic orientation of a firm relates to the way a firm tries to achieve these outcomes. By comparing different strategic dimensions, one can assess the relative emphasis the firm places on ways to achieve performance outcomes (Morgan & Strong, 2003:164-165).

For the purpose of this study the dimensions considered in a strategic orientation of the firm result from the market orientation (Kohli & Jaworski, 1990; Narver & Slater, 1990) and the innovation orientation (Morris, 1998) of the firm.

The dimension of *information generation* relates to organisation-wide activities to learn about clients' future needs. The information derives from various resources such as the clients, business partners or market research (Kohli & Jaworski, 1990:4).

Information dissemination within the organisation considers a firm's approach to spreading relevant information via different communication channels (Kohli & Jaworski, 1990:5).

Interfunctional coordination between departments relates to sharing of information and resources between departments (Narver & Slater, 1990:22).

Innovation intensity is a concept that derives from the entrepreneurial intensity idea (Morris, 1998). Innovation intensity considers a firm's general predisposition towards innovation. The number of new innovations and the significance of the innovation are also considered.

For the purpose of this study, information generation, information dissemination, interfunctional coordination and innovation intensity represent the **strategic orientation** of a firm.

3.7.2.4 Entrepreneurial behaviour

Firms that have specified their strategic orientation, set up their entrepreneurial capital and have corporate entrepreneurial management support also need to display entrepreneurial behaviour.
Entrepreneurial behaviour is an action orientation that consists of the two dimensions: proactiveness (Miller & Friesen, 1978) and responsiveness to information (Kohli & Jaworski, 1990).

A firm's *proactiveness* describes a general predisposition to events in the market. It is possible either to be the first one to introduce new changes or to rather follow developments (Miller & Friesen, 1978:923).

A firm's *responsiveness to the market* relates to internal actions that can be taken in order to respond to market events (Kohli & Jaworski, 1990:6).

For the purpose of this study **entrepreneurial behaviour** comprises the two dimensions of proactiveness and responsiveness to the market.

3.7.3 Outcomes of market-driving ability

Previous research in market-driving has considered performance outcomes on the basis of competitive advantage and/or business performance (Barlow Hills & Sarin, 2003; Carrillat *et al.,* 2004; Harris & Cai, 2002; Jaworski *et al.,* 2000; Kumar *et al.,* 2000; Schindehutte *et al.,* 2008).

3.7.3.1 Relative competitive strength

Competitive advantage results as a firm responds to environmental changes or new information in the market. Firms respond by taking appropriate actions within their internal structure to build the necessary capabilities and resources which allow them to be ahead of competitors (Cockburn, Henderson & Stern, 2000:1129,1141-1142).

Relative competitive strength considers a firm's share of the market, which gives an indication of its position in the market (Burke, 1984:347).

Relative competitive strength treats markets and competitors as given. As market-driving firms also pursue activities to find new market space, this dimension is limited to market-driving activities that aim to shape and change the behaviour of stakeholders in a set market. The change of behaviour can be assessed by a comparison of competitive strength between organisations.

3.7.3.2 Firm performance

Research on market driving reveals that shaping, changing and creating new structures and/or stakeholder behaviour results in superior firm performance (Carrillat *et al*., 2004).

Firm performance can be assessed by using financial or non-financial measures (Lumpkin & Dess, 1996:153-155). Moorman and Rust (1999:187) state that most managers are unwilling to disclose objective financial data. Hence, more subjective measures such as managers' perceptions are used to assess business performance

and are considered to be a reliable indicator, as objective and subjective assessments are strongly correlated.

For the purpose of this study, **business performance** will be measured by subjective assessments by respondents.

3.8 CONCLUSION

The aim of this chapter was to give an overview of the literature relating to market-driving behaviour of firms.

Seven different concepts and frameworks were presented, their primary findings were summarised and research suggestions were outlined.

Market-driving ability was defined as a dynamic firm capability that consists of different interconnected firm-internal activities that aim to shape, change or create new structures and/or behaviour of market players. A market-driving ability is influenced by a firm's approach to entrepreneurial, market and organisational behaviour. The outcomes of a market-driving behaviour are superior business performance and relative competitive strength.

In a next step a broader framework for market-driving ability was developed, which provides the basis for this study. It was argued that a market-driving approach considers all stakeholders, such as customers, competitors and business partners. Further, a market-driving ability requires several activities that lead to shaping, changing and creating structures and/or behaviours of market players. These changes in structures and/or behaviour impact on the firm itself, the market or the entire industry. The outcomes of market driving in corporate entrepreneurship are superior firm performance and competitive advantage.

The conceptual model for this study has been derived from the general framework. It was stated that in order to shape, change or create structures and/or behaviour, firms need to demonstrate certain capabilities. These capabilities were presented as the

antecedents of the model. The outcomes of a market-driving ability were specified as firms' performance and competitive strength.

In chapter four the conceptual model will be transformed into a measurement model and different measurement instruments will be discussed.

CHAPTER 4:
DEVELOPING A MODEL OF MARKET-DRIVING ABILITY IN CORPORATE ENTREPRENEURSHIP

4.1 INTRODUCTION

"Theory development typically focuses on relationships among theoretical constructs, placing little emphasis on relationships between construct and measures. In most cases, constructs are treated as causes of their measures …" (Edwards & Bagozzi, 2000:155).

Considerable attention has been paid over the past 25 years to the scale development process in order to improve validation of constructs. However, these procedures are grounded in classical test theory, which assumes that the constructs cause their measures (reflective perspective) and do not consider that there are cases in which the indicators cause the latent construct (formative perspective) (MacKenzie, Podsakoff & Burke Jarvis, 2005:710).

It is observed that most researchers in social sciences assume that indicators of latent constructs are reflective, despite the fact that formative indicators are appropriate (Diamantopoulos *et al*., 2008:1204). Reasons for this situation may be the convenience factor in analysing models under the reflective view. A number of programmes are available for the analysis of covariance-based structural equation modelling (Law & Wong, 1999:156).

However, researchers argue that technical convenience should not guide the research and the adoption of the type of measurement model (Law & Wong, 1999:159). Furthermore, model misspecification has a serious impact on the conclusions on and interpretation of models (Diamantopoulos *et al*., 2008; MacKenzie *et al*., 2005; Podsakoff, MacKenzie, Podsakoff & Yeon Lee, 2003).

The purpose of this chapter is threefold. First, it will provide a literature review of measurement instruments that have been used in past research relating to the various constructs defined in chapter three.

Second, it will present in a literature review various types of measurement models and their characteristics. Third, it will develop a model for market-driving ability and outline propositions.

4.2 LITERATURE REVIEW ON MEASURING INSTRUMENTS

In order to prepare the conceptual model of market-driving ability developed in chapter three for measurement, an analysis of selected measuring instruments that have been used in previous research is presented. The following paragraphs outline the dimensions of each measurement instrument and its reliability and validity.

Reliability is a measure to assess the extent to which measures provide consistent results (Cooper & Schindler, 2008:292). Reliability can be estimated by internal consistency, the split-half approach or the test-retest method. Internal consistency is a predominant measure in research studies. It is measured by Cronbach's alpha, which reflects the correlation of the number of items and their average correlation (Nunnally & Bernstein, 1994:251,254). Cronbach's alpha can achieve values between zero and one, whereby the closer the value is to one the more reliable the scale (Santos, 1999:2). Nunnally (1978 in: Santos, 1999:2) indicates that values at 0.7 represent acceptable reliability.

Reliability is considered as a necessary, but not sufficient, contribution to validity (Cooper & Schindler, 2008:292). Validity measures comprise measures for external and internal validity. External validity is concerned with the generalisability of research results. Internal validity refers to the ability of the research instrument to measure what it is supposed to measure (Cooper & Schindler, 2008:289). Within internal validity three types can be distinguished: content validity, construct validity and criterion-related validity (Cooper & Schindler, 2008:290-292; Nunnally & Bernstein, 1994:108).

To ensure content validity it is necessary to have a well-formulated plan on how to measure certain items before the test is applied. The items can also be presented to a panel of persons to assess the validity of the items (Cooper & Schindler, 2008:290; Nunnally & Bernstein, 1994:102-103).

Construct validity considers theory and the measurement instrument. Construct validity considers aspects of convergent and discriminant validity. Convergent validity can be assessed by correlating the developed scale with other scales that purport to measure the same construct. Discriminant validity is determined by relating the developed scale to measures that are supposed to measure different constructs (Cooper & Schindler, 2008:291-292).

Criterion-related validity considers how well the measures can be used for estimation or prediction (Cooper & Schindler, 2008:291). To estimate whether a specific item serves as a valid measure for the scale, the item needs to be correlated with two groups that are supposed to be different. If no difference between the two groups regarding the item can be established, concurrent validity is not achieved (Bryman & Bell, 2007:165).

Most of the presented scales have been developed as a part of a broader study which often relates the scales to other constructs. However, for the purpose of this study only the scales that can potentially be used to measure market-driving, antecedents and consequences of market-driving ability are presented.

4.2.1 Measuring instruments for market driving

In chapter three market driving was outlined as a specific firm behaviour. Certain abilities such as market sensing, influencing customer preferences and alliance formation characterise market driving (Barlow Hills & Sarin, 2001, 2003; Ghauri *et al*., 2008; Harris & Cai, 2002; Jaworski *et al*., 2000). However, no measurement instrument for market driving has been developed so far.

Market sensing has been defined as capturing aspects of forward-looking firm activities that consider all relevant stakeholders. This aspect is closely related to

influencing customer preferences, which also needs a forward-looking approach, as well as an information component in order to educate customers about new products and services (Barlow Hills & Sarin, 2001, 2003; Ghauri *et al*., 2008; Harris & Cai, 2002; Jaworski *et al*., 2000).

The following measuring instruments are considered to capture aspects of the concepts of market sensing and influencing customer preferences.

Narver *et al*. (2004:336) developed a scale entitled MOPRO (proactive market orientation) which consists of items that capture customer's latent needs by monitoring customer behaviour and exceeding customer expectations. Furthermore, a proactive market orientation involves leading the customer.

The MOPRO scale consists of 34 items. After exploratory factor analysis was conducted, 11 items remained with a Cronbach's alpha of 0.892. In confirmatory factor analysis it was found that the construct was not unidimensional. Reducing the items to eight resulted in a unidimensional measure with satisfactory fit indices. Convergent, divergent and discriminant validity were demonstrated, using the responsive market orientation scale as a comparison (Narver *et al*., 2004:339-341).

A similar activity has been described as "scanning intensity" by Barringer and Bluedorn (1999:423). Environmental scanning refers to activities aimed at learning about events and trends in the firm's environment. The information that is obtained from scanning can be further used to recognise opportunities or reduce uncertainty.

A 12 item scale for scanning intensity was developed, focusing on the efforts taken towards environmental scanning and the comprehensiveness of the scanning process (Barringer & Bluedorn, 1999:428). Six items measured the effort towards scanning and included modified items from Miller and Friesen's (1982) effort dedicated towards a scanning scale. The comprehensiveness was also measured by six items asking for the scanning elements that are used in the firm. A mean score over the 12 items constituted the scanning intensity (Barringer & Bluedorn, 1999:428).

Reliability was assessed by Cronbach's alpha, which showed acceptable values (alpha = 0.83). Discriminant validity was established by exploratory factor analysis. Two modified items from Miller and Friesen's (1982) measures did not load high on any factor. However, for conceptual reasons the two items remained in the scale (Barringer & Bluedorn, 1999:429-430).

The scales developed by Narver *et al.* (2004) and Barringer and Bluedorn (1999) demonstrate high reliability values, with Cronbach's alpha scores of 0.89 and 0.83 respectively. Hence, items of these scales can be used in further studies. However, it needs to be considered that the scales have not been assessed on a longitudinal basis or across countries and industries (Narver *et al*., 2004:344).

Alliance formation represents the third concept in the market-driving construct.

In the literature strategic alliance is described as a voluntary agreement between independent firms for exchange, sharing or co-development (Gulati, 1999:397; Ireland *et al*., 2002:413; Kale *et al*., 2000:218; Rothaermel & Deeds, 2006:430).

The use of strategic alliances is most often operationalised as an independent variable indicating a specific number of alliances in the areas of research and development, marketing, licensing agreements or cross-licensing. The duration of strategic alliances is also measured (Deeds & Hill, 1996:48; Dickson & Weaver, 1997:411; Gulati, 1999:405; Hitt, Dacin, Levitas, Arregle & Borza, 2000:457; Kale *et al*., 2000:226).

Alliance management capability refers to a firm's ability to effectively manage multiple alliances. It is argued that alliance management capability is built through alliance experience and the alliance type (Rothaermel & Deeds, 2006:430-431).

Alliance type was measured through the number of research and development alliances the firm had entered. Alliance experience considered the firms alliance duration. Alliance management capability was measured by the number of alliances a firm was able to manage productively (Rothaermel & Deeds, 2006:441-442).

Discriminant validity for alliance management capability was established (Rothaermel & Deeds, 2006:445).

Kale *et al*. (2000:220) measured the aspects of trust which develops between firms based on close interaction at a personal level with the construct "relational capital". A five item measure was used to capture mutual trust between alliance partners (Kale *et al.,* 2000:237). Reliability was assessed using Cronbach's alpha, which was very satisfactory (alpha = 0.906). Content validity was established by pre-testing the survey instrument (Kale *et al*., 2000:226).

Rothaermel and Deeds (2006) and Kale *et al*. (2000) provide valid aspects for the measurement of alliance. Rothaermel and Deeds (2006) focus on the management aspect of alliances, whereas Kale *et al*. (2000) research the concept of trust that needs to be present in alliances. Both aspects are considered to be important in the measurement of alliance formation.

4.2.2 Measuring instruments for entrepreneurship

The following paragraphs present selected studies that developed or replicated measuring instruments for entrepreneurship and corporate entrepreneurship.

4.2.2.1 Entrepreneurial orientation measuring instruments

The following paragraphs outline several scales for measuring entrepreneurial constructs.

One of the most widely used measurement instruments in entrepreneurship is the construct of entrepreneurial orientation, which was originally developed by Miller and Friesen (1982) and subsequently developed further by Covin and Slevin (1986) (Kreiser *et al*., 2002:71).

Entrepreneurial orientation is considered to be a multidimensional construct that encompasses a firm's activities regarding innovation, risk-taking and proactiveness (Miller & Friesen, 1982:7,17-24; Miller, 1983:770-771).

Miller and Friesen (1982:7-10) analysed innovation and risk-taking together with other strategic and environmental variables. Good construct reliability for innovation and risk-taking (Cronbach's alpha = 0.77; 0.91 respectively) was achieved. The concept of proactiveness was not explicitly included in the study.

Covin and Slevin (1986:629-631) developed a measurement scale of entrepreneurial behaviour taking into consideration items developed by Miller and Friesen (1982) and Khandwalla (1977). A total of 10 items was used to measure entrepreneurial behaviour. Risk-taking consisted of six items that were taken from Khandwalla (1977). Product innovation consisted of two items adapted from Miller and Friesen (1982). Proactiveness consisted of two self-constructed items considering Miller and Friesen's (1982) description of the concept.

Factorial validity was assessed to determine unidimensionality. The analysis showed that four items loaded poorly on a single factor. These were items from the risk-taking dimension. The remaining six items showed acceptable results. Reliability was assessed using Cronbach's alpha for the six items, which showed satisfactory results (alpha = 0.79). Finally an entrepreneurship index was calculated, using the mean score of the six items (Covin & Slevin, 1986:632-634,638-639).

Considering the fact that four items out of 10 did not represent the entrepreneurship construct it needs to be questioned whether sufficient validity of the construct has been established. Furthermore, a validation of the scale compared with other scales would have been beneficial, to establish more confidence in the entrepreneurship index.

Since innovation was measured subjectively on the scale by Miller and Friesen (1982:922), Jennings and Young (1990:54) developed an objective measure of product innovation and compared their scale with the subjective measures.

The objective measures were developed based on five financial ratios which served as indicators for product innovation. The subjective measure consisted of three items developed by Miller and Friesen (1982) to measure innovation activities with regard to new product development (Jennings & Young, 1990:57).

Construct reliability was demonstrated for the objective and subjective measures (Cronbach's alpha = 0.75; 0.92 respectively). Correlation analysis for both measures was performed and resulted in a significant relationship between the two measures (Jennings & Young, 1990:58-61). Jennings and Young (1990:62) concluded that objective and subjective measures of product innovation can be used interchangeably.

Besides the well-known three concepts of innovation, risk-taking and proactiveness to measure entrepreneurial orientation, Lumpkin and Dess (1996:140,148) conceptually defined entrepreneurial orientation consisting of five dimensions: the three dimensions developed by Miller and Friesen (1982) and also autonomy and competitive aggressiveness.

In a separate study, Lumpkin and Dess (2001:439,441-443) operationalised entrepreneurial orientation using four concepts, namely risk-taking, innovation, proactiveness and competitive aggressiveness. Items for risk-taking, innovation and proactiveness were taken from scales developed by Khandwalla (1977), Miller (1983) and Covin and Slevin (1986,1989) and partly adapted. Competitive aggressiveness was measured by two items. One was taken from Covin and Slevin (1989) and one was self-constructed. It was found that the four concepts of entrepreneurial orientation represent distinct factors. Reliability was reported for proactiveness and competitive aggressiveness, which demonstrated a satisfactory value for proactiveness (Cronbach's alpha = 0.79) and a less reliable value for competitive aggressiveness (Cronbach's alpha = 0.66).

Although Lumpkin and Dess (2001) demonstrated that entrepreneurial orientation can be measured by four distinct concepts, the three dimensions developed by Miller and Friesen (1982) have been most widely used in entrepreneurship and strategic management research (Kreiser *et al*., 2002:71).

Knight (1997:215) assessed the scale developed by Khandwalla (1977) and termed it the ENTRESCALE. Eight items were used in the study. In order to identify whether entrepreneurial orientation is a unidimensional or multidimensional construct, a factor analysis was performed, which showed a two-factor structure. All items were

assessed regarding their reliability and an overall Cronbach's alpha value of 0.834 was established (Knight, 1997:218-219). Knight (1997:219) used structural equation modelling to assess construct validity. The measurement model fitted the data well, lending support for construct validity. Construct validity was tested in the form of discriminant validity, using a correlation analysis correlating the aggregated ENTRESCALE dimensions with other relevant entrepreneurship measures, which showed satisfactory results (Knight, 1997:220).

Chadwick *et al*. (2008:70,76) examined the entrepreneurial orientation scale with nine items covering innovation and proactiveness. The scale demonstrated good reliability, with Cronbach's alpha values at 0.82. The reliability is consistent with Knight's (1997) findings. Factor analysis was conducted, which showed a reliable two-factor structure which was also found in Knight's (1997) study. Convergent validity was assessed using correlation analysis between the ENTRESCALE and a measure of proactiveness developed by Venkatraman (1989; in Chadwick *et al*., 2008:75). Support for convergent and nomological validity was found (Chadwick *et al*., 2008:75-76).

The studies presented so far consider that entrepreneurial orientation consists of three dimensions: innovation, risk-taking and proactiveness, which are either present in an organisation or not. Morris and Sexton (1996), however, developed an approach which demonstrates that entrepreneurial orientation can be assessed based on the degree and amount of entrepreneurship that takes place in an organisation.

Morris and Sexton (1996:5-9) developed the construct of entrepreneurial intensity. The underlying concepts are innovation, risk-taking and proactiveness. It is argued that entrepreneurship is a matter of degree and frequency. The degree of entrepreneurship was measured by items covering the extent of top-management decision making in an innovative, risk-taking and proactive way. These items were developed by Miller and Friesen (1983:232) and adapted by other researchers. Next, the number of new products, services and processes was assessed, by indicating if they were new to the world, new to the market or modifications or extensions of pre-existing items.

Satisfactory reliability could be achieved for the degree of entrepreneurship. Innovativeness demonstrated a Cronbach's alpha of 0.84, risk-taking was at 0.72 and proactiveness at 0.67. Regarding frequency of entrepreneurship, absolute numbers were reported. The entrepreneurial intensity measure was calculated by mean scores of the degree of entrepreneurship and the average of responses on the frequency dimension. The measure of entrepreneurial intensity was an equally weighted index of the combination of degree and frequency (Morris & Sexton, 1996:9-10).

The presented studies on the measurement of entrepreneurial orientation showed that the construct can be measured reliably by the three concepts of innovation, risk-taking and proactiveness. Whereas some researchers argue that entrepreneurial orientation is a unidimensional construct (Covin & Slevin, 1986), others demonstrate that it is a multidimensional construct consisting of distinct factors (Chadwick *et al*., 2008; Knight, 1997; Lumpkin & Dess, 2001; Miller & Friesen, 1982).

George (2011:3) takes the discussion further and argues that entrepreneurial orientation is not only a multidimensional construct, but that it can also be modelled as a reflective or formative construct. The differences and implications of reflective versus formative measurements will be outlined in section 4.3.1.

4.2.2.2 Corporate entrepreneurship measuring instruments

Khandwalla (1977:23,424,637) developed a measurement instrument to assess corporate design of organisations. Corporate design is influenced by environmental, strategic, structural and behavioural constructs. Reliability was measured using Nunnally's formula for reproducibility. The values are stated in brackets where applicable.

The environmental construct consisted of variables measuring research and development activities (n.a.), the rate of innovation (0.76), competitive pressure (0.56) and the external environment (n.a.) (Khandwalla, 1977:639-642,659).

The strategic construct included variables measuring performance aspirations (0.69), the organisation's orientation to diversification (n.a.) and vertical integration (n.a.),

standardisation orientation (0.45), risk-taking (0.53), optimisation of use of resources (0.80), participation (0.85), flexibility (0.68) and coercion of top management (0.52) (Khandwalla, 1977:642-650,660-661).

The technological construct consisted of variables capturing capital intensity (n.a.) and orientation towards mass production (n.a.) (Khandwalla, 1977:650-651,661).

The structural construct included measures of delegation of authority (0.81), distribution network (n.a.), vertical integration (0.69), divisionalisation (n.a.) and sophistication of control and information systems (0.80) (Khandwalla, 1977:651-655).

The control of behaviour construct was used to assess management's activities to reduce conflict or improve coordination (n.a.) (Khandwalla, 1977:655-656).

Performance was measured with an index of subjective (0.84) as well as an index of objective performance (n.a.) (Khandwalla, 1977:656-658).

Although values for competitive pressure (0.56), performance aspirations (0.69), risk-taking (0.53), coercion (0.52) and flexibility (0.68) are below the suggested criterion of 0.7, they were included in the study since the research was in its early stages and low values can be accepted in that stage (Khandwalla, 1977:658).

Overall the scale developed by Khandwalla (1977) showed that different aspects of a corporate management style can be measured reliably.

Zahra (1991:272) developed a measure for corporate entrepreneurship. Zahra states that his corporate entrepreneurship indicators cover an organisation's actual engagement in entrepreneurship, whereas other measures such as the scale developed by Miller (1983) measure the disposition towards entrepreneurship.

Corporate entrepreneurship was measured by four indicators, a corporate entrepreneurship index, sales derived from new business lines, sales derived from new products or brands and an external orientation of corporate entrepreneurship (Zahra, 1991:271-272).

First, a corporate entrepreneurship index was developed. The index consists of nine items which showed acceptable reliability (Cronbach's alpha = 0.86). The items relate to areas such as supporting and rewarding employees, engagement in innovation, organisational structure, management support, competitor orientation and environmental aspects (Zahra, 1991:271,285). The corporate entrepreneurship index was shown to be valid when correlated with Miller's (1983) index consisting of the concepts of innovation, risk-taking and proactiveness. Further, a clear distinction from Miller's (1983) index could be shown (Zahra, 1991:271).

The second measure in Zahra's (1991) model is percentage of sales derived from new lines of business. The third measure considers percentage of sales derived from new products or brands. The last measure accounts for external orientation of corporate entrepreneurship, which was measured by the number of joint ventures the organisation had participated in the past three years. Reliability for these indicators was established using objective as well as subjective data (Zahra, 1991:272).
Zahra (1991:278) also demonstrated a positive association of corporate entrepreneurship with financial performance measures.

Antoncic and Hisrich (2001:495-496) used the ENTRESCALE (Knight, 1997) and the corporate entrepreneurship scale by Zahra (1991) to further refine the measurement scales and assess their cross-national validity.

The construct of corporate entrepreneurship consisted of 37 items that measured four concepts. Reliability in the form of Cronbach's alpha was assessed for the Slovenian and the US sample. The values are provided in brackets. The four concepts consider: new business venturing (0.83/0.51), innovativeness (0.89/0.87), self-renewal (0.92/0.83) and proactiveness (0.69/0.66). Except for proactiveness, all concepts showed acceptable levels of reliability. Exploratory factor analysis and confirmatory factor analysis were conducted for all dimensions and showed satisfactory results. Convergent and discriminant validity were also established (Antoncic & Hisrich, 2001:517-518).

Overall, the corporate entrepreneurship construct showed acceptable internal and external validity regarding the generalisability across the two samples (Antoncic &

Hisrich, 2001:521). These results give confidence for the use of corporate entrepreneurship items in future international research studies.

Kuratko *et al*. (1990:54) developed a comprehensive measurement of corporate entrepreneurship in the “Intrapreneurial Assessment instrument (IAI)”.

The scale was further refined by Hornsby, Montagno and Kuratko (1992 in Hornsby *et al*., 1999:12) leading to the “Corporate Entrepreneurship Assessment Instrument (CEAI)”.

Hornsby *et al*. (2002:253) applied the Corporate Entrepreneurship Assessment Instrument (CEAI) to middle managers. The purpose of the study was to assess firm-internal factors that influence middle management’s participation in corporate entrepreneurship activities.

The following five concepts were used to measure corporate entrepreneurship: management support, organisational structure, risk-taking, time availability and reward and resource availability. The concepts were operationalised with a total of 84 items (Hornsby *et al*., 2002:263).

Exploratory and confirmatory factor analysis resulted in five factors. Reliability for all factors was established with Cronbach’s alpha. The values are provided in brackets. The five factors are: management support (0.92), work discretion (0.86), rewards/reinforcement (0.75), time availability (0.77) and organisational boundaries (0.69). Results from a second sample also showed a five-factor model and high reliability (Hornsby *et al*., 2002:266-267). Discriminant validity was established for all five factors (Hornsby *et al*., 2002:268).

The presented studies by Khandwalla (1977), Zahra (1991) and Hornsby *et al*. (2002) demonstrate that corporate entrepreneurship is a diverse construct. Besides the entrepreneurial orientation constructs of innovation, risk-taking and proactiveness, other relevant constructs have been considered. All three studies show that entrepreneurial orientation can reliably be measured by internal and external dimensions. While Hornsby *et al*. (2002) focus on a comprehensive internal measure

of corporate entrepreneurship considering management support, organisational structure, rewards, time and resource availability; Khandwalla (1977) and Zahra (1991) also include external dimensions such as a competitor orientation and environmental changes. All three studies demonstrate acceptable reliability values for their scales, which provide a basis for their use in further research.

Brown, Davidsson and Wiklund (2001:954) developed a measurement instrument based on Stevenson's (1983 in Brown *et al.,* 2001:952) conceptual model of entrepreneurship as opportunity-based firm behaviour.

Brown *et al*. (2001:955) operationalised Stevenson's conceptualisation of entrepreneurial management to assess a firm's degree of entrepreneurship.

Stevenson's entrepreneurial management construct consisted of eight dimensions: strategic orientation, commitment to opportunity, commitment of resources, control of resources, management structure, reward philosophy, growth orientation and entrepreneurial culture (Brown *et al*., 2001:955-956).

The developed scale consisted of a total of 20 items measuring the different dimensions. Factor analysis showed six distinct factors, which suggests discriminant validity. Strategic orientation and commitment to opportunity formed one factor and commitment of resources and control of resources another factor. The remaining constructs formed one factor each. Reliability measures expressed in Cronbach's alpha showed satisfactory values for strategic orientation (alpha = 0.82), management structure (alpha = 0.78) and growth orientation (alpha = 0.71). Cronbach's alpha was lower for entrepreneurial culture (alpha = 0.68), resource orientation (alpha = 0.58) and reward philosophy (alpha = 0.58) (Brown *et al*., 2001:957-959, 963).

Convergent validity was established through a comparison of the entrepreneurial management scale with Covin and Slevin's (1989) entrepreneurial orientation scale. Correlation between the two indices revealed a moderately high degree of correspondence, which demonstrates that the two measures are related, but only partly overlapping (Brown *et al.,* 2001:961). Factor analysis with both scales resulted

in nine distinct factors, which represent the six factors of the entrepreneurial management scale and three factors from the entrepreneurial orientation scale. This result shows that the two scales are distinct. This was further supported by correlation analysis of the factor indices, which indicated rather low correlations between them (Brown *et al*., 2001:961).

Although the research focus of the two studies by Brown *et al*. (2002) and Hornsby *et al*. (2002) was somewhat different, the concepts that were used for measurement are comparable. Both approaches include measures of resource availability, organisational structure, rewards and management support. Furthermore, both studies demonstrate reliability and validity of each concept. Brown *et al*. (2001) further include aspects of strategic orientation, growth orientation and culture. These additional aspects provide an even more holistic view of the corporate entrepreneurship construct.

4.2.3 Measuring instruments for entrepreneurial capital

Various studies use three dimensions of entrepreneurial capital, namely financial, social and human capital (Audretsch & Keilbach, 2004:419; Firkin, 2001:2) for measuring.

Entrepreneurial capital has been associated with performance and competitive advantage due to the inimitability of human and social capital (Audretsch & Keilbach, 2004:419; Hatch & Dyer, 2004:1155; Hitt *et al*., 2001:13).

Financial capital considers financial assets of any form that are directly convertible into money (Firkin, 2001:2). Audretsch and Keilbach (2004:423) measured financial capital using inventory and past investments within the manufacturing sector.

Unger *et al*. (2011:1,6) conducted a meta-analysis on human capital measures that have been applied in studies over a 38-year period.

Studies were rather diverse in their conceptualisation of human capital, which makes it difficult to assess what kind of human capital should be considered (Unger *et al*., 2011:2).

Quantitative studies that were included in the meta-analysis were grouped in one of two human capital aspects. First, human capital was considered as an investment which includes aspects such as education, start-up experience, industry-specific experience, management experience and work experience. Second, human capital was considered as an outcome, which summarises effects of human capital investments such as entrepreneurial skills, competencies and knowledge (Davidsson & Honig, 2003:306; Unger *et al.,* 2011:3,9).

Unger *et al*. (2011:10-11) note that not all studies included in the meta-analysis reported reliability on their measurement. However, the average Pearson Product-Moment Correlation for studies that reported reliability was 0.77, which indicates high reliability of the measures.

Hitt and Ireland (2002:4) defined human capital as including aspect such as education, experience, knowledge and skills. This definition is very similar to that of Rauch *et al*. (2005:683,688), who defined human capital as consisting of education, experience and skills that help to get the work tasks done. The construct was conceptualised as an index for which the individual dimensions were defined to be causal. As will be outlined later in this chapter, conventional reliability and validity assessments cannot be used with causal indicators. Procedures to ensure reliability and validity of measures were conducted.

Overall, the studies presented by Unger *et al*. (2011) and Rauch *et al*. (2005) indicate that human capital can be measured reliably using the aspects of education, experience, knowledge and skills.

Davidsson and Honig (2003:307) state that social capital refers to people's ability to take advantage of their social structures, networks or memberships. Furthermore, social capital is considered to be multidimensional and occurs on an individual and organisational level.

Social capital has been operationalised using the number of organisations, associations, communities or alumni organisations an individual belongs to (Davidsson & Honig, 2003:309,314; De Carolis *et al*., 2009:535).

De Carolis *et al*. (2009:535) operationalised social capital using two dimensions: social networks and relational capital. The concept of social networks was measured by the number of networks a person belonged to. The second dimension consisted of three items measuring the extent of involvement in these organisations. Reliability of social capital was acceptable, with a Cronbach's alpha of 0.76.

Baron and Markman (2000:107) suggest that social capital should also consider social skills. They argued that a person's access to networks depends on the ability to interact effectively with others.

Baron and Markman (2003:49) measured social skills by various items suggested by the social skills inventory (SSI) by Riggio (1986:652), and further developed new items. The resulting factor structure considered social perception, social adaptability, and expressiveness, which yielded acceptable Cronbach's alpha values of 0.83, 0.67 and 0.74 respectively.

The social skills inventory (SSI) consists of 105 items which measure seven dimensions of social skills: emotional expressivity, emotional sensitivity, emotional control, social expressivity, social sensitivity, social control and social manipulation. The dimensions showed good reliability values; Cronbach's alpha was between 0.75 and 0.88 (Riggio, 1986:653).

Overall the studies on social capital presented indicate that the construct can reliably be measured in its quantitative and qualitative aspects. The quantitative part includes aspects such as the number of networks or the amount of time spent conducting networking activities. The qualitative aspects of the construct consider social skills, which include social perception, adaptability or expressiveness (Baron & Markman, 2003; Davidsson & Honig, 2003; De Carolis *et al*., 2009; Riggio, 1986).

4.2.4 Measuring instruments for market orientation

The two main scales for market orientation have been developed by Narver and Slater (1990) and Kohli and Jaworski (1990). Desphandé *et al*. (1993) developed a scale to assess a firm's customer orientation.

The three scales have been further developed and streamlined by Deshpandé and Farley (1998) and Matsuno *et al*. (2005).

The following paragraphs outline the properties of the different market orientation scales.

Narver and Slater (1990:22) developed a measurement instrument for market orientation as an organisational culture.

Narver and Slater (1990:22) defined market orientation as a unidimensional construct consisting of three behavioural aspects: customer orientation, competitor orientation and interfunctional coordination, and two decision criteria: long-term focus and profit objective of the business (Narver & Slater, 1990:22).

Items for each of the five concepts of market orientation were developed, and content validation was established by using a panel of experts in the strategic marketing field (Narver & Slater, 1990:23). Customer orientation was measured using six items, competitor orientation included four items, and interfunctional coordination consisted of five items. The two decision criteria were measured using three items each (Narver & Slater, 1990:24).

Internal consistency was assessed using Cronbach's alpha and item-to-total correlations. The Cronbach's alpha values for customer orientation (alpha = 0.868), competitor orientation (alpha = 0.727) and interfunctional coordination (alpha = 0.735) were satisfactory. However, values for long-term focus (alpha = 0.408) and profit emphasis (alpha = 0.004) were below the recommended value of 0.7 (Nunnally, 1978 in Santos, 1999:2). Consequently the two decision

criteria were not further analysed. However, inter-rater reliability was assessed and showed satisfactory results (Narver & Slater, 1990:24).

Construct validity was assessed by convergent, discriminant and concurrent validity. Convergent validity between the three concepts of market orientation was assessed with correlation analysis, which showed satisfactory results. Discriminant validity was measured with a scale that is considered to be different from market orientation. The results provided support for discriminant validity (Narver & Slater, 1990:25).

To assess concurrent validity, Narver and Slater (1990:26) correlated the market orientation construct with two constructs that had been validated before. The correlations showed satisfactory results, providing support for concurrent validity (Narver & Slater, 1990:26).

Jaworski and Kohli (1993:53) constructed their scale of market orientation using three different concepts: intelligence generation, intelligence dissemination and responsiveness to information. A total of 32 items were developed to assess the concepts. 10 items relate to intelligence generation, eight to intelligence dissemination and 14 to responsiveness to information.

Reliability measures in the form of Cronbach's alpha for the dimensions showed satisfactory results. The following Cronbach's alpha values were identified: intelligence generation 0.71, intelligence dissemination 0.82, responsiveness to information 0.82 (Jaworski & Kohli, 1993:60,65).

A mean score for the overall market orientation construct was calculated by adding the corresponding item scores from all three concepts. Correlation between the overall score and each of the three concepts, as well as correlation between the three concepts, showed satisfactory results (Jaworski & Kohli, 1993:60).

In another study Kohli *et al*. (1993:467) developed the MARKOR scale, which is a further refinement of the original scale by Jaworski & Kohli (1993).

It hypothesised that the market orientation construct represents one general factor consisting of three correlated factors. Based on error variance estimates and analysis of cross-loadings of items, the original scale of 32 items was reduced to 20 items, which represented a better model fit (Kohli *et al*., 1993:470).

In another step a multi informant sample was drawn to run a replication analysis to determine the appropriate factor structure. It was found that several of the models that included a general factor of market orientation and three component factors lacked discriminant validity between intelligence dissemination and responsiveness to information (Kohli *et al*., 1993:470-471).

Further confirmatory factor analysis was conducted to assess the validity of the market orientation construct. Overall moderate validity was found (Kohli *et al*., 1993:473).

Deshpandé *et al*. (1993:24,27) developed a measure for customer orientation. The dimensions of customer orientation related to the conceptual definition by Kohli and Jaworski (1990) and Narver and Slater (1990). The construct consisted of nine items (Deshpandé *et al*., 1993:29,33-34).

Reliability was assessed using Cronbach's alpha, which was satisfactory (alpha = 0.69). Internal validity was determined using item-to-total correlations (Deshpandé *et al*., 1993:29).

Deshpandé and Farley (1998:213,216) directly compared the three scales developed by Narver and Slater (1990), Kohli *et al*. (1993) and Deshpandé *et al*. (1993), based on reliability and validity analysis. Moreover, a synthesis of the three scales for market orientation into the MORTN scale was developed.

Acceptable Cronbach's alpha levels were found for the Narver and Slater scale (1990) (alpha = 0.90) and the Deshpandé *et al.* scale (1993) (alpha = 0.72) and somewhat lower reliability levels for the Kohli *et al*. scale (1993) (alpha = 0.51) (Deshpandé & Farley, 1998:216).

Construct validity was calculated using three items from an unrelated scale. Results showed strong discriminant validity (Deshpandé & Farley, 1998:218). External validity was assessed using a constant-sum scale which showed satisfactory results for all three scales (Deshpandé & Farley, 1998:217). Predictive validity considering performance indicators for all three scales was determined, showing satisfactory results (Deshpandé & Farley, 1998:218).

High correlations between the three scales, as well as a high degree of intra-company reliability, could be shown. A comparison of inter-rater reliability allows the conclusion that the three scales can be used interchangeably in practice (Deshpandé & Farley, 1998:218-219).

A cross-national comparison of the three scales showed strong reliability in European and US studies. The scale by Deshpandé *et al*. (1993) has the broadest international exposure, with applications of the scale in India, China, Japan, Germany and England (Deshpandé & Farley, 1998:219-220).

Cross national assessment of validity did not show any significant differences between countries or industries, lending support to the conclusion that all three scales are valid across different nations and industries (Deshpandé & Farley, 1998:221-222).

A synthesis of the three scales was developed in order to account for redundancies by using all three scales as well as achieving a smaller number of items to make the market orientation scale practical for use in larger studies (Deshpandé & Farley, 1998:222).

Factor analysis with 44 items from all three scales was performed resulting in one factor that explained more than 40% of variance. This factor included 10 items from all three scales and was termed the MORTN scale. The MORTN scale showed high reliability (alpha = 0.88) and predictive validity (Deshpandé & Farley, 1998:222-223).

Matsuno *et al*. (2005:3-4) developed the EMO (extended market orientation) scale, which extends the scales by Narver and Slater (1990) and Kohli *et al*. (1993). A

comparison between the EMO scale and the scales by Narver and Slater (1990) and Kohli *et al*. (1993) was conducted.

The EMO scale incorporates a broader scope of stakeholders and market factors. It consists of the concepts of intelligence generation, dissemination activities and responses to market players and has a total of 22 items. Information generation consisted of eight items, information dissemination included six items and responsiveness to information was measured with eight items. Cronbach's alpha for each concept and the overall market orientation measure (alpha = 0.85) showed satisfactory results: information generation (alpha = 0.65), information dissemination (alpha = 0.75), responsiveness to information (alpha = 0.81). Further, convergent validity was established (Matsuno *et al*., 2005:4-6).

Unidimensionality for all three scales was assessed. A second-order confirmatory factor analysis produced satisfactory fit indices for the EMO and the Narver and Slater (1990) scale. For the Kohli *et al*. (1993) scale unidimensionality could not be assessed and it was subsequently removed from further analysis (Matsuno *et al.*, 2005:5).

On the level of the second-order factor structure the two remaining scales were assessed based on their fit statistics. Both scales achieved good fit statistics (Matsuno *et al*., 2005:5).

Predictive validity was determined for the Narver and Slater (1990) scale and the EMO scale using performance measures in structural equation modelling. Both scales were positively related to performance indicators indicating predictive validity. However, the scale by Narver and Slater (1990) was considered to be more efficient in prediction as it considers fewer items (Matsuno *et al*., 2005:5-6).

Overall, Matsuno *et al*. (2005:6) note that no single scale was found absolutely satisfactory.

The presented studies on measuring instruments for market orientation have evolved around the concepts developed by Narver and Slater (1990), Kohli and Jaworski

(1990) and Jaworski and Kohli (1993). Various studies extended and compared the original scales (Deshpandé *et al*., 1993, Deshpandé & Farley, 1998; Kohli *et al*., 1993; Matsuno *et al*., 2005). The studies showed consistently acceptable reliability and validity of the scales, even in an international setting (Deshpandé *et al*., 1993). However, it appears that no scale is completely satisfactory in capturing the construct of market orientation (Matsuno *et al*., 2005:6). It needs to be noted that market orientation has been measured as a reflective construct that is considered to be either unidimensional (Deshpandé & Farley, 1998; Narver & Slater, 1990) or multidimensional (Jaworski & Kohli, 1993; Kohli *et al*., 1993; Matsuno *et al*., 2005).

4.2.5. Measuring instruments for firm performance and relative competitive strength

Financial performance can be measured using objective measures or subjective measures. Objective measures relate to actual percentage figures of sales growth, turnover or profitability (Dawes, 1999:65). However, as mentioned in chapter three, most managers are unwilling to disclose firm performance indicators (Moorman & Rust, 1999:187). Moreover, in some cases the collection of objective financial data may not be viable, as the data may only be available on an aggregated level which is not appropriate for the level of analysis (Wall, Michie, Patterson, Wood, Shehan, Clegg & West, 2004:96).

Various studies measuring market orientation have previously used subjective measures of performance (Dawes, 1999; Dess & Robinson, 1984; Moorman & Rust, 1999).

Measures for subjective performance relate to questions such as “Please rate the overall financial results of your firm”, and “Please rate the return on investment or return on assets of your firm”. Answers to these questions are given on a scale with anchor labels such as “very good”, “very poor” (Dawes, 1999:65,69-70).

A comparison of studies that use objective and subjective performance measures shows that these measures are strongly correlated, which demonstrates convergent

validity (Dawes, 1999:68-70; Dess & Robinson, 1984:269; Moorman & Rust, 1999:187).

Wall *et al*. (2004:95) analysed the validity of subjective measures. The subjective measures asked for the company's performance in comparison to the main competitor. Objective measures included financial data from audited records. The study showed convergent and discriminant validity (Wall *et al*., 2004:101,104,111).

Considering the results of the presented studies, subjective measures of financial firm performance provide a reliable measure if objective data cannot be obtained.

Some researchers (Barney, 1991:99) argue that competitive advantage derives from the firm's resources, which must be valuable, rare, inimitable and sustainable. Other researchers (Porter, 1980 in Cockburn *et al*., 2000:1126) argue that competitive advantage derives from the firm's microeconomic environment (Cockburn *et al*., 2000:1126).

Cockburn *et al*. (2000:1128) state that competencies may lead to competitive advantage. However, one also needs to understand where the competencies come from.

In order to achieve competitive advantage it is necessary to have the required resources but at the same time have strategies to transform these resources into capabilities (Chandler & Hanks, 1994:335).

Generic strategies of competitive advantage are described as cost leadership, differentiation and focus (Porter, 1998:xxii).

Chandler and Hanks (1994:338) measured competitive strategies using three dimensions: innovation, quality and cost leadership. All three dimensions were measured with multiple items.

Innovation was measured by three items: being the first to have new products available, stressing new product development and engaging in innovative marketing

techniques (Chandler & Hanks, 1994:338). The second dimension, high quality, was measured by five items: emphasis on quality control, meeting customer requirements, emphasis on firm's superior customer service, producing only the highest quality products and setting customer needs first (Chandler & Hanks, 1994:338). Cost leadership was the third dimension, consisting of three items: emphasising cost reduction in business operations, emphasising improvement in employee productivity and operations efficiency, and lower production cost due to process innovation (Chandler & Hanks, 1994:338).

For all three dimensions Cronbach's alpha was assessed and showed acceptable values: innovation (alpha = 0.70), quality (alpha = 0.78) and cost-leadership (alpha = 0.73). Discriminant validity between the three dimensions was also established (Chandler & Hanks, 1994:338-339).

Zhou, Brown and Dev (2009:1065) measured competitive advantage using differentiation advantage consisting of two types: namely market differentiation and innovation differentiation. Items for market and innovation differentiation were modified from Chandler and Hanks (1994). Exploratory and confirmatory factor analysis were performed to assess reliability and convergent and discriminant validity. The analysis showed acceptable values. Composite reliability for market differentiation was 0.73 and for innovation differentiation 0.66 (Zhou *et al*., 2009:1067-1068).

Burke (1984:347) developed a measure for relative competitive strength which considered a business unit's share of the market. This measure is considered to reflect the business unit's position within the market compared with that of major competitors.

Relative competitive strength was measured by multiple items. Items compared the business unit with its major competitor in five dimensions: product changes, price changes, service improvements, technological innovation and marketing methods. Reliability was assessed by Cronbach's alpha, which was completely satisfactory (alpha = 0.94). Discriminant validity between relative competitive strength and other constructs was established (Burke, 1984:351-353).

Competitive strength is considered to have explanatory power over performance. It captures how well the firm systematically engages with its environment and how well it can distinguish itself from other firms (Augusto & Coelho, 2009:96).

Augusto and Coelho (2009:96-98,101) state that competitive strength captures aspects of how well a firm can anticipate and shape the market in which it operates. Competitive strength was measured by five items relating to those of the competition: the organisation's prices, quality of products, capacity to compete, diversity of product and its tendency to be ahead of competitors. The items were derived from Burke (1984). Composite reliability, which can be compared to Cronbach's alpha, was acceptable, with a value of 0.81 which exceeds the reference value of 0.7. Convergent and discriminant validity were established (Augusto & Coelho, 2009:100).

The presented studies on competitive advantage measure the construct using different aspects of market-related items and firm-internal items. The market-related items refer to market share and activities to compete with competitors. Firm-internal factors consider the capacity to innovate, and quality and cost aspects. In combination these items provide a good measure of the construct, as has been demonstrated by the acceptable reliability and validity measures (Augusto & Coelho, 2009; Burke, 1984; Chandler & Hanks, 1994; Zhou *et al*., 2009).

4.3 LITERATURE REVIEW ON STATISTICAL MODELLING

In statistical modelling, causal modelling is considered to be the most prominent approach for theory development. This framework considers cause and effect relationships between constructs (Jaccard & Jacoby, 2010:137-138; Shmueli, 2010:289). Structural equation modelling (SEM) is used to quantitatively assess cause-effect relationships between variables of interest (Pearl, 2007:135).

In statistical modelling a careful distinction between causal explanation and empirical prediction needs to be made (Shmueli, 2010:289). The purpose of exploratory modelling is causal explanation, which tries to match the statistical model with the data to draw inferences (Shmueli, 2010:290,293). Empirical prediction is conducted

in predictive modelling. The focus of predictive modelling is on the individual constructs in the model. The statistical model is used to predict new values of the dependent variable (Shmueli, 2010:290,293). The perspectives of causation versus prediction are also reflected in the two approaches that can be applied to SEM, namely covariance-based structural equation modelling and partial-least squares modelling. The two approaches will be discussed in more detail in chapter five.

The general model of SEM considers two types of variables: latent variables or latent constructs, which are variables that cannot be directly observed or measured. These variables have also been termed unobserved or unmeasured variables. Latent variables need to be inferred from a set of observed variables. Observed variables are also called measured, manifest, or indicator variables, items or proxies. These variables represent a set of variables that are used to define the latent variable or construct (Bollen, 1989:11,16; Diamantopoulos *et al*., 2008:1204; Schumacker & Lomax, 2010:3).

SEM consists of two parts. The first is a measurement model that specifies the relationships between the latent variables and their measures. The second is a structural model which specifies the causal relationships between the latent variables (Anderson & Gerbing, 1988:411; Bagozzi & Baumgartner, 1994:387; Bollen, 1989:11; Burke Jarvis *et al*., 2003:199; Diamantopoulos *et al*., 2008:1204; Edwards & Bagozzi, 2000:155; Law *et al*., 1998:741).

The following paragraphs outline both parts and describe the various steps to specify the measurement model and the structural model.

4.3.1 Measurement model

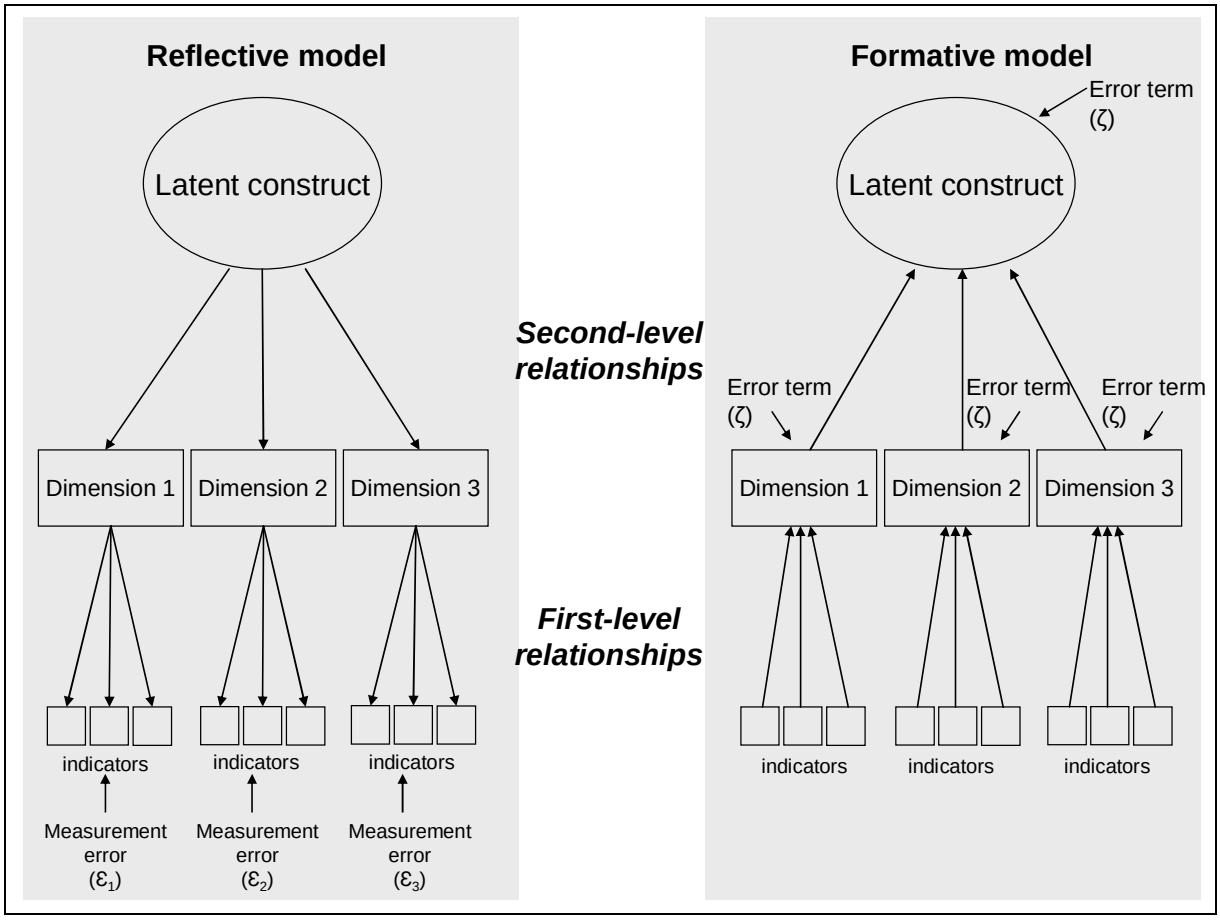
Multidimensional constructs are often used in research to assess the overall latent variable. A multidimensional construct is a construct involving more than one dimension which is treated as a single theoretical concept. A dimension is a manifestation of the construct (Diamantopoulos *et al*., 2008:1205; Edwards, 2001:144; Law *et al.,* 1998:741; Law & Wong, 1999:144; MacKenzie *et al*., 2005:711).

It is argued that multidimensional constructs are useful as they present a holistic view of complex phenomena and at the same time account for precision in measuring the dimensions (Edwards, 2001:145). However, it is important that the relationships between the construct and its dimensions are well defined (Law *et al*., 1998:741).

There are various ways in which a multidimensional construct can relate to its dimensions and the dimensions to the indicators. When dealing with multidimensional constructs it is necessary to distinguish between different levels of analysis. The first level (first-order) is relating the observed variables to their dimensions. The second level (second-order) relates the dimensions to the latent constructs. For each level either a formative or a reflective specification is possible (Diamantopoulos *et al*., 2008:1205-1206)

The following figure presents the two types of relationships.

FIGURE 4.1: Reflective and formative relationships



Source: adapted from MacKenzie *et al*. (2005:711,714)

Burke Jarvis *et al*. (2003:204) observe that it is possible for single multidimensional constructs to have different measurement models, one relating its measures to its first-order constructs and another one relating its dimensions to the second-order factor. Therefore it is possible to have mixed models such as first-order reflective and second-order formative or vice versa.

The characteristics of the reflective and formative models can be described from four aspects, such as causality, intercorrelation, error term, antecedents and consequences. The following descriptions apply to both, first-level and second-level relationships, but only second-level relationships will be explicitly described.

First, in the reflective model the causality flows from the construct to the dimensions. Therefore the structural paths on the path diagram (Figure 4.1) point from the construct towards the dimensions (Bollen & Lennox, 1991:306; Burke Jarvis *et al*., 2003:203; Diamantopoulos *et al*., 2008:1205; Law & Wong, 1999:144-145; MacCallum & Browne, 1993:533; MacKenzie *et al*., 2005:711,713).

In the formative model the dimensions cause the construct, they make the construct appear. The paths in the path diagram (Figure 4.1) point from the dimensions to the construct (Edwards, 2001:147; Law *et al*., 1998:745; Law & Wong, 1999:146; MacCallum & Browne, 1993:533).

Second, the dimensions in the reflective model need to be positively correlated as they represent the same underlying construct and share a common theme (Bollen & Lennox, 1991:307; Burke Jarvis *et al*., 2003:203; Diamantopoulos *et al.,* 2008:1205; Law & Wong, 1999:144-145; MacKenzie *et al.,* 2005:711).

In formative models there are no specific expectations about intercorrelations between dimensions (Bollen & Lennox, 1991:308; Diamantopoulos *et al*., 2008:1204). Formative dimensions of the same construct can have positive or negative correlations or no correlation. As the dimensions capture distinct aspects of the latent construct, they are not interchangeable. Omitting one dimension changes the whole construct (Bollen & Lennox, 1991:308; Diamantopoulos *et al*., 2008:1204).

Therefore using instruments like factor analysis to examine the correlations between the dimensions could have a serious negative impact, as one could overlook valid dimensions that determine the construct. Moreover, high correlations between the dimensions make it difficult to separate the distinct influence of each dimension on the latent construct, which is described as a multicollinearity problem (Bollen & Lennox, 1991:307).

Third, in the reflective model the measurement error is determined on the level of observed variables (Bollen & Lennox, 1991:306; Diamantopoulos & Winkelhofer, 2001:271; MacKenzie *et al*., 2005:711).

For formative models an error term is captured on the construct level which impacts on the latent variable but is uncorrelated with the observed measures. The error term cannot be considered as a measurement error. It is rather a disturbance term that comprises all remaining causes of the construct that are not represented by the indicators (Diamantopoulos, 2006:9-10; Edwards, 2001:155).

Fourth, antecedents and consequences of the measures need to be considered. In the reflective model indicators reflect the underlying construct and should therefore have the same antecedents and consequences (Burke Jarvis *et al*., 2003:203; MacKenzie *et al*., 2005:713). In formative models indicators do not necessarily capture the same aspects of the construct and therefore they cannot be expected to have the same antecedents and consequences (Burke Jarvis *et al.,* 2003:203; MacKenzie *et al.,* 2005:713).

4.3.1.1 Scale development

Rossiter (2002:306,308) describes a six-stage process of generating and selecting items to measure a construct. The process considers reflective and formative cases in scale development. The steps for scale development are outlined in the following paragraphs.

First, the construct must be defined in terms of the object, the components and the attributes, and the rater entity. The construct refers to a phenomenon of theoretical

interest that is described in terms of the object, including its constituents or components (reflective or formative dimensions), the attributes (reflective or formative indicators) and the rater (person who judges) (Rossiter, 2002:308,310).

The second step in scale development is to classify the objects. Objects can either be concrete singular (unidimensional), abstract collective (reflective multidimensional) or abstract formed (formative multidimensional). The latter two classifications require an index when it comes to enumeration and reporting (Rossiter, 2002:313).

Third, attributes can be classified into concrete (singular), (abstract) formed and (abstract) eliciting (Rossiter, 2002:313).

Concrete attributes have unanimous agreement between different raters and refer to only one characteristic. For these attributes a single-item measure is sufficient and valid. This means that the description of that item and the response categories must be clear (Rossiter, 2002:313-314).

Components adding up to the overall meaning of the attribute are called formed attributes. The response to the components causes the attribute to appear (Rossiter, 2002:314).

Researchers have different opinions about the number of attributes. Diamantopoulos and Winkelhofer (2001:271) state that formed attributes require a census of indicators, whereas Rossiter (2002:314) argues that the formed attribute needs to include main components; otherwise one searches for low-incidence components.

An abstract-eliciting attribute describes attributes that consider traits or a disposition. The items are manifestations of the trait or disposition. Furthermore, raters' answers on which characteristics represent the attribute would differ only slightly. Eliciting attributes should be written as a set of distinct activities. Items are interchangeable and a reasonable sample of items, up to five items, is considered to be sufficient (Rossiter, 2002:316-318).

The next step in scale development is rater identification. The scale score reliability will differ depending on the rater entity, which can be an individual, experts or a group. First, individual raters are persons providing self-reports on attributes. Expert raters, conduct a content analysis and thus reliability of the attributes. Group raters are usually a sample of consumers, managers, salespersons etc. The object that these raters assess is often a company or a product (Rossiter, 2002:318-319).

The fifth step in scale formation puts together the object items with their attribute items to form the scale. The scale items need to be easily understood, and this needs to be tested in pre-tests. For first-order eliciting attributes, coefficient beta, which is a test to assess unidimensionality, should be computed. Values of at least 0.5 are needed to infer that there is a general factor accounting for 50% of the item variance. For second-order eliciting attributes, a confirmatory factor analysis can be applied (Rossiter, 2002:320-322). The response answer format should consider questions that do not imply any intensity. The answer categories should be developed considering minimum to maximum intensity (Rossiter, 2002:323).

The last step in scale development is the enumeration process. This process describes procedures to derive a total score from scale items. As the construct can consist of different object and attribute types, the procedures will vary. An index can be described as a sum of item scores. A profile rule can also be established where each component must exceed a minimum level in order to be included in the index. A multiplicative rule can be applied in cases where a theory regarding the construct's algebraic relations is available. In all other cases a linear relationship between the construct and its dimensions should be assumed. Items can also be weighted before the index is computed. However, it is necessary to have a conceptual definition for it, as empirical weighting is not appropriate. Furthermore, items for indexes cannot be deleted, as they form the scale. Eliciting attributes are, however, interchangeable items (Law *et al*., 1998:751; Rossiter, 2002:325).

4.3.1.2 Reliability and validity assessments of the measurement model

Bollen (1989:194) states that the problem with common reliability and validity tests is that they consider only observed measures but do not account for the latent variable and hence measurement error.

In order to determine reliability and validity of the measurement model it is necessary to assess the indicators themselves, as well as their relation to their latent variables. The procedures vary depending on the type of indicators, reflective versus formative (Jahn, 2007:21).

In the reflective case, a first step is to analyse factor loadings, which should achieve a minimum value of 0.7 (Henseler, Ringle & Sinkovics, 2009:299; Jahn, 2007:21). However, Chin (1998:325) notes that loadings with 0.5 and 0.6 can also be considered if research development is in the early stages.

In a second step internal consistency of indicators is determined with composite reliability. Composite reliability is more accurate than Cronbach's alpha, which is sensitive to the number of indicators (Chin, 1998:320; Jahn, 2007:21).

A third step combines reliability and validity assessments in the measurement model. The average variance extracted (AVE) determines the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error (Fornell & Larcker, 1981:45). Values lower than 0.5 indicate that the variance due to measurement error is larger than the variance captured by the construct. This means that validity of the indicators and the construct is questionable (Fornell & Larcker, 1981:46).

In the case of formative indicators reliability in the form of internal consistency cannot be applied as indicators can have positive, negative or zero correlation (Burke Jarvis *et al*., 2003:202; Diamantopoulos *et al*., 2008:1215).

Indicator validity can be assessed in various ways. First, the loadings which reflect the impact of the formative indicator on the latent construct need to be significant.

Items with non-significant loadings should be eliminated as they do not represent valid indicators of the construct (Diamantopoulos *et al.*, 2008:1215).

Diamantopoulos and Winkelhofer (2001:272) suggest validity assessment by using an overall measure that summarises the essence of the construct. A high relationship between the formative indicator and the overall item signifies indicator validity.

Assessing validity on the construct level focuses on nomological and/or criterion-related validity. To assess nomological validity, Diamantopoulos and Winkelhofer (2001:273) suggest linking the latent construct with other related constructs such as antecedents and/or consequences. In order to assess validity three steps need to be considered. First, it is necessary to gather additional information on the related construct. Second, the related construct needs to be reflective, and third, a theoretical relationship between the latent construct and the related construct needs to be generated.

Diamantopoulos and Siguaw (2006:271-272) provide an approach to assessing criterion validity. An external construct which is positively related to the focal construct is developed. Regression analysis is performed on all indicators of the focal construct (reflective and formative) and the external construct to assess the magnitude and significance of the relationships.

Diamantopoulos and Siguaw (2006:267,275) note that the initial item pool for both types of measurement, reflective or formative, is the same. Hence, items that have been used in reflective models can also be applied to formative models. However, after identification, reliability and validity assessments have been conducted, one cannot expect to have the same item pool for reflective and formative models.

The previous paragraphs have outlined reliability and validity assessments of measurement models. It has been noted that different approaches need to be followed when dealing with reflective and formative models. The reflective assessment basically follows traditional scale evaluation procedures, which allow for determining reliability and validity. For formative models reliability cannot be determined. However, validity becomes even more important, and this was described

by the assessment of validity measures such as indicator validity, nomological validity and criterion validity. Further, formative models need to be identified, which requires additional measures (Diamantopoulos & Winkelhofer, 2001; Diamantopoulos & Siguaw, 2006; Diamantopoulos *et al.*, 2008).

4.3.1.3 Model misspecification and its impact

Although reflective and formative measures were initially developed around the same time, the 1960s and 1970s, in today's social sciences reflective measurements are commonly used, whereas formative measurements are rarely used in research endeavours (Diamantopoulos, 2006:7). A reason for this may be the convenience of analysing models under the reflective view. A number of programmes are available for the analysis of covariance based structural equation modelling (Law & Wong, 1999:156).

However, researchers argue that technical convenience should not guide the research and the adoption of the type of measurement model as a misspecification can have serious effects (Law & Wong, 1999:159).

Model misspecification influences the estimates of the measurement and structural model parameters, which affect the conclusion about the theoretical relationships among the constructs (Burke Jarvis *et al.,* 2003:207,209). Burke Jarvis *et al.* (2003:212) conducted a Monte Carlo simulation manipulating the measurement model and the structural model. It was found that goodness-of-fit indices are not able to detect model misspecification, as indices produce satisfactory results for the incorrectly as well as the correctly specified models. A model could show satisfactory fit indices even though the structural parameters are biased, which would result in misleading inferences. Furthermore, paths in the structural model coming from a misspecified construct could lead to type I errors. Paths leading into a construct with a misspecified model could lead to type II errors.

MacKenzie (2003:324) notes that measurement model misspecification can undermine construct validity. First, the relationship between the measures and the construct are misrepresented. Second, if a formative indicator were treated as a

reflective indicator scale purification methods, such as alpha coefficients, could lead the researcher to drop items even though they represent valid measures of the construct.

Burke Jarvis *et al*. (2003:206) reviewed the measurement model specifications of four top marketing journals regarding construct definition over a 24-year period. Their results indicated that out of 1192 analysed constructs, 839 (70%) were correctly specified, and 353 (30%) were incorrectly modelled. The majority of constructs (810) were reflective constructs which were correctly specified.

Podsakoff *et al*. (2003:649-650) found that out of 138 analysed leadership constructs, 65 (47%) were incorrectly specified, with reflective indicators rather than the correct specification of formative indicators.

Burke Jarvis *et al*. (2003:208) present an overview of constructs commonly used in marketing literature which should be specified in a formative way. Among those constructs is market orientation, which should be specified as a second-order formative construct involving intelligence generation, dissemination and responsiveness to information. As outlined in section 4.2.4, the market orientation construct has previously been measured as a unidimensional (Narver & Slater, 1990) or reflective multidimensional construct (Jaworski & Kohli, 1993; Kohli *et al*., 1993; Matsuno *et al*., 2005).

Cadogan, Souchon and Procter (2008:1263) developed a formative, multidimensional model of market-oriented behaviours using the elements of the market orientation construct by Kohli and Jaworski (1990). Cadogan *et al*. (2008:1272-1274) identified all the variables that form market orientation and assessed nomological validity for the model. The fit indices for all three concepts of information generation, dissemination and responsiveness were good. Cadogan *et al*. (2008:1274) suggest replicating the study in order to prove stability.

Coltman, Devinney, Midgley and Venaik (2008:1260) also modelled market orientation as a formative construct. In their empirical study it was found that market orientation can be modelled in both ways: reflective and formative.

George (2011:12-15) develops a second-order formative model of entrepreneurial orientation, consisting of the reflective first-order concepts innovation, proactiveness and risk-taking. The formative model is compared with a reflective model. The results indicate that when entrepreneurial orientation is constructed as a second-order reflective construct, the causal paths are inflated, leading to invalid conclusions. However, in a comparison of fit indices the model misspecification could not be detected.

The presented studies indicate that model misspecification is a serious problem that can lead to wrong inferences. Furthermore, it has been found that fit indices are not always suitable for detecting model misspecification (Burke Jarvis *et al*., 2003; George, 2011; MacKenzie, 2003). A selected number of studies were presented that outline the modelling of market orientation and entrepreneurial orientation as formative constructs. The studies showed acceptable reliability and validity values (Cadogan *et al.*, 2008; George, 2011). One study found that market orientation can be modelled either in a formative or reflective way (Coltman *et al*., 2008).

4.3.2 Structural model

The structural model focuses on the causal relationships between the latent variables which are represented as paths (Bollen, 1989:11; Jaccard & Jacoby, 2010:166).

First, the direction of the paths needs to be determined, which is followed by an estimation of the path strength. Path strength is described by path coefficients (Jahn, 2007:10).

Two types of structural models can be distinguished, which determine the demands for statistical analysis. First, the recursive model is characterised by uncorrelated disturbance terms and unidirectional causal effects. The statistical requirements for this analysis are rather simple. Second, non-recursive models have correlated disturbance terms and can have feedback loops which require additional assumptions (Kline, 2011:106). For the purpose of this study a recursive model of market-driving ability was developed.

Structural models distinguish between exogenous and endogenous variables. An exogenous variable does not have causal paths pointing at it, whereas endogenous variables have at least one causal path going into them (Jaccard & Jacoby, 2010:145). The effect of one latent variable on the other can be analysed as direct, indirect and total effects (Jahn, 2007:10).

In a final step the whole model (structural and measurement) is submitted to testing. The available procedures and the appropriate fit indices to evaluate model fit will be outlined in chapter five.

The following section will outline the measurement and structural model for market-driving ability in corporate entrepreneurship.

4.4 MODEL OF MARKET-DRIVING ABILITY IN CORPORATE ENTREPRENEURSHIP

In the following the measurement and structural model of market-driving ability in corporate entrepreneurship are described.

4.4.1 Measurement models

The following section outlines the measurement models used in this study to determine market-driving ability. The scale and index development follows the steps described by Rossiter (2002).

The rater identity is the same for all following measurement models. Raters in this study are members of an organisation operating in the South African healthcare industry who hold a junior, middle or top management position.

The South African healthcare sector is characterised by a dual system: the public and private sector. The overall spending of the public sector accounts for 34% of total health expenditure, while the private sector makes up 66%. The prevalence of diseases like HIV/Aids and tuberculosis is among the highest in the world (Avert, n.d.). Furthermore, diseases of a modern society such as hypertension and diabetes

are very evident. The South African government strives to improve the healthcare for all citizens and plans to introduce a national health insurance system (SouthAfrica.info, 2009).

The healthcare sector comprises several market players which form a part of this study, such as the pharmaceutical industry, medical device industry, medical schemes and pharmaceutical distributors/wholesalers. The healthcare sector provides growth opportunities as well as challenges due to changes in the regulatory environment, which makes it an ideal industry to investigate market-driving ability of organisations.

4.4.1.1 Measurement model for market driving

As outlined in chapter three researchers differ in their opinions on how market driving can be described. For the purpose of this study market driving is considered to be a second-order formed abstract object which includes three components: a firm's activities regarding market sensing, influencing customer preferences and alliance formation.

Market driving is considered as formative, as the three dimensions make unique contributions to the construct. Hence, omitting one would change the construct of market driving. Furthermore, a change in one of the three components would be expected to change the overall construct of market driving. Finally, the three components of market sensing, influencing customer preferences and alliance formation do not share a common theme (MacKenzie, 2003:325).

Following Rossiter's (2002:313) suggestion, an index was generated for market driving.

The next step in scale formation was to classify the dimensions market sensing, influencing customer preferences and alliance formation. The items of these dimensions are first-order relationships and represent the specific manifestation of the dimension; hence they are described as eliciting attributes.

The items of the respective dimensions are indicative rather than formative. Causality flows from the dimensions, such as market sensing, to the items which represent the dimension.

As suggested by Rossiter (2002:317) each attribute should include three to five items to assess unidimensionality. In accordance with the discussed literature (Bollen & Lennox, 1991:306; Diamantopoulos & Winkelhofer, 2001:271; MacKenzie *et al*., 2005:711), for each observed reflective item a measurement error term is added and a disturbance term is added for the formative construct of market driving.

The full questionnaire is provided in Annexure A.

Alliance formation was measured by five self-constructed items (questions 54-58) for which ideas were taken from Kale *et al*. (2000), Baron and Markman (2000) and Gulati (1999).

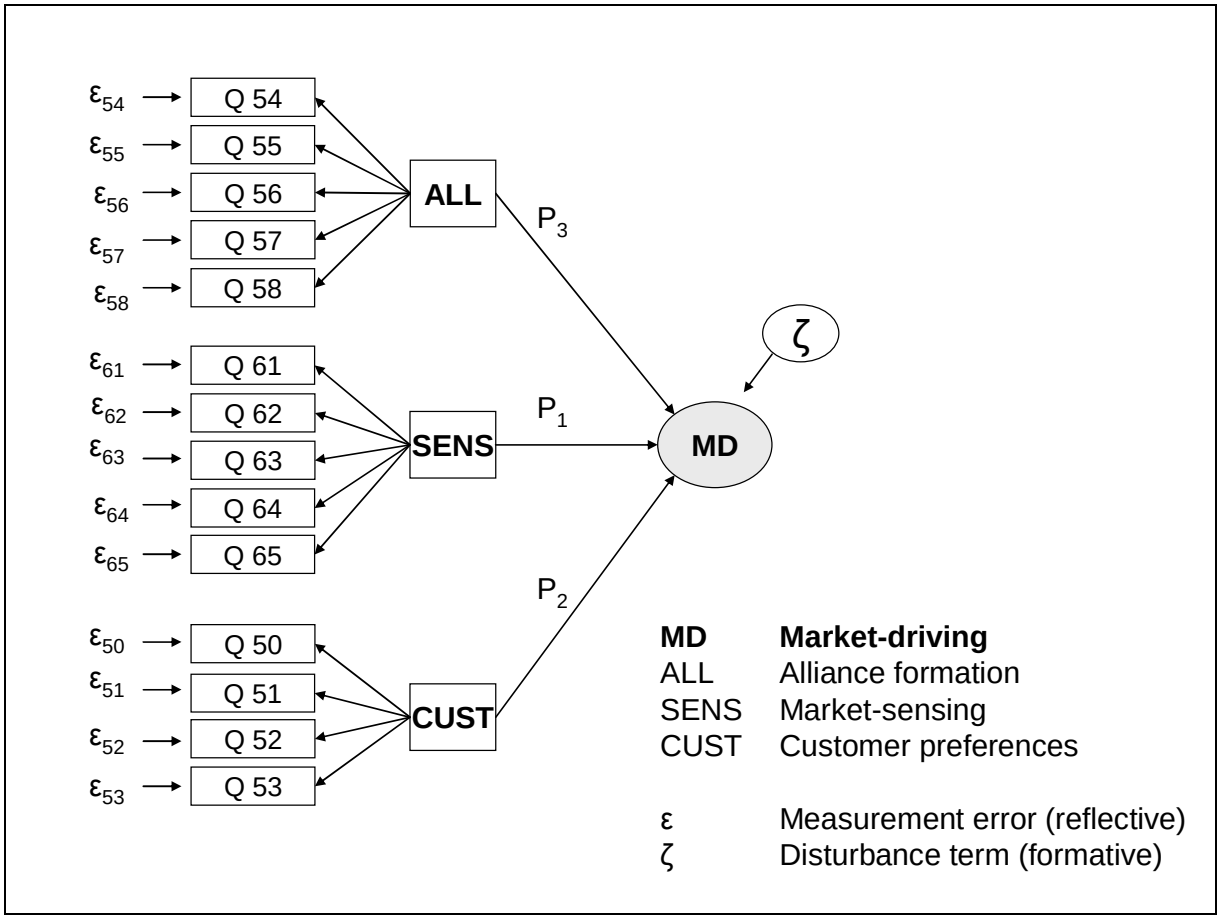
Market sensing was measured by five items (questions 61-65) which were adapted from the scanning intensity scale by Barringer and Bluedorn (1999) and the scanning items used by Miller and Friesen (1982).

Influencing customer preferences was measured by four self-constructed items (questions 50-53), taking ideas from Narver *et al*. (2004), Jaworski *et al*. (2000) and Kumar *et al*. (2000).

The last step in scale formation has been described as the enumeration process (Rossiter, 2002:325). A summed index was formed for market driving which was derived from the sum of item scores. Further, a linear relationship between market-driving and its components was assumed.

Figure 4.2 summarises the measurement model for market driving.

FIGURE 4.2: Measurement model for market driving



Source: Author's own compilation

In a first step propositions are formulated. Cooper and Schindler (2008:64) state that propositions are statements about concepts that may be true or false. In chapter five propositions are formulated for empirical testing and hence become hypotheses.

The following propositions derive from the measurement model:

P1: Market driving can be measured by market-sensing activities.

P2: Market driving can be measured by activities related to influencing customer preferences.

P3: Market driving can be measured by alliance-formation activities.

4.4.1.2 Measurement model for corporate entrepreneurial management

Corporate entrepreneurial management is considered to be a second-order formed abstract object consisting of three dimensions: risk-taking, management support and organisational structure.

The dimensions consist of first-order eliciting attributes which are represented in questions 1-10. Causality flows from the dimension, for example from risk-taking to its items.

An index for corporate entrepreneurial management was developed which consisted of the sum of item scores.

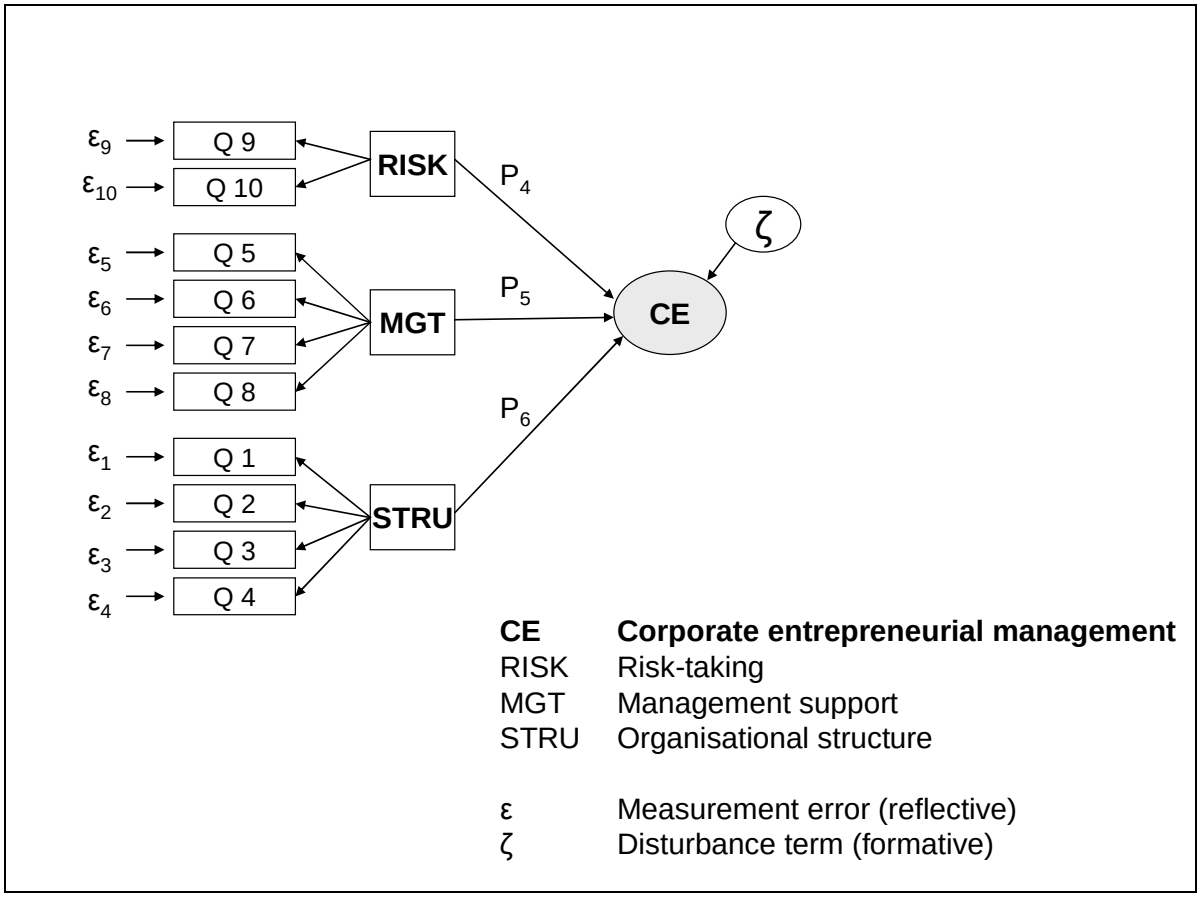
Risk-taking was measured by the two items (questions 9-10) developed by Miller and Friesen (1982) which have been used in numerous previous studies (Kreiser *et al.*, 2002; Miles & Arnold, 1991; Morris & Sexton, 1996; Smart & Conant, 1994).

Management support consisted of four items (questions 5-8), which were derived from Hornsby *et al*. (2002).

Organisational structure consisted of four items (questions 1-4), adapted from Hornsby *et al*. (2002) and Khandwalla's study (1977).

The following figure summarises the measurement model for corporate entrepreneurial management.

FIGURE 4.3: Measurement model for corporate entrepreneurial management



Source: Author's own compilation

The propositions for corporate entrepreneurial management are as follows:

P4: Corporate entrepreneurial management can be measured by risk-taking activities.

P5: Corporate entrepreneurial management can be measured by management support.

P6: Corporate entrepreneurial management can be measured by organisational structure.

4.4.1.3 Measurement model for entrepreneurial capital

Entrepreneurial capital is considered to be a second-order eliciting attribute which is reflected in the three dimensions of financial, social and human capital. These three

dimensions are first-order eliciting attributes which consist of three items each. A total item score for entrepreneurial capital was generated.

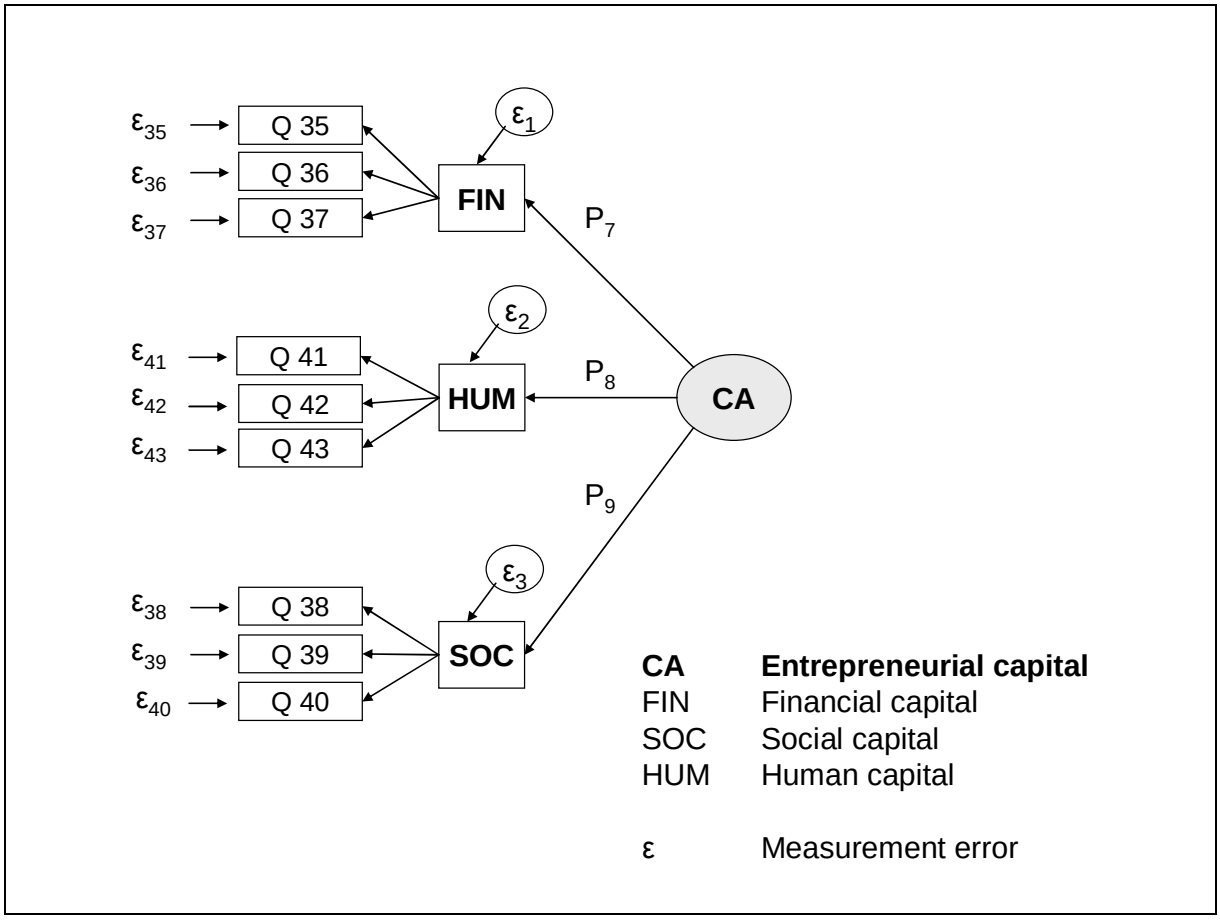
Financial capital was measured by three items (questions 35-37). The items were self-constructed; ideas were taken from Miller and Friesen (1982) and Khandwalla (1977).

Human capital included three items (questions 41-43) which were self-constructed; ideas were taken from Unger *et al*. (2011) and Rauch *et al*. (2005).

Social capital consisted of three items (questions 38-40) which were self-constructed; ideas for the item development were taken from Baron and Markman (2000).

The following figure summarises the measurement model for corporate entrepreneurial management.

FIGURE 4.4: Measurement model for entrepreneurial capital



Source: Author's own compilation

The propositions for entrepreneurial capital are as follows:

P7: Entrepreneurial capital is reflected in financial capital.

P8: Entrepreneurial capital is reflected in human capital.

P9: Entrepreneurial capital is reflected in social capital.

4.4.1.4 Measurement model for strategic orientation

Strategic orientation is considered to be a second-order formed attribute which is caused by four dimensions information generation, information dissemination, interfunctional coordination and innovation intensity. These four dimensions are first-order eliciting attributes. An index for strategic orientation was developed which consisted of the sum of item scores.

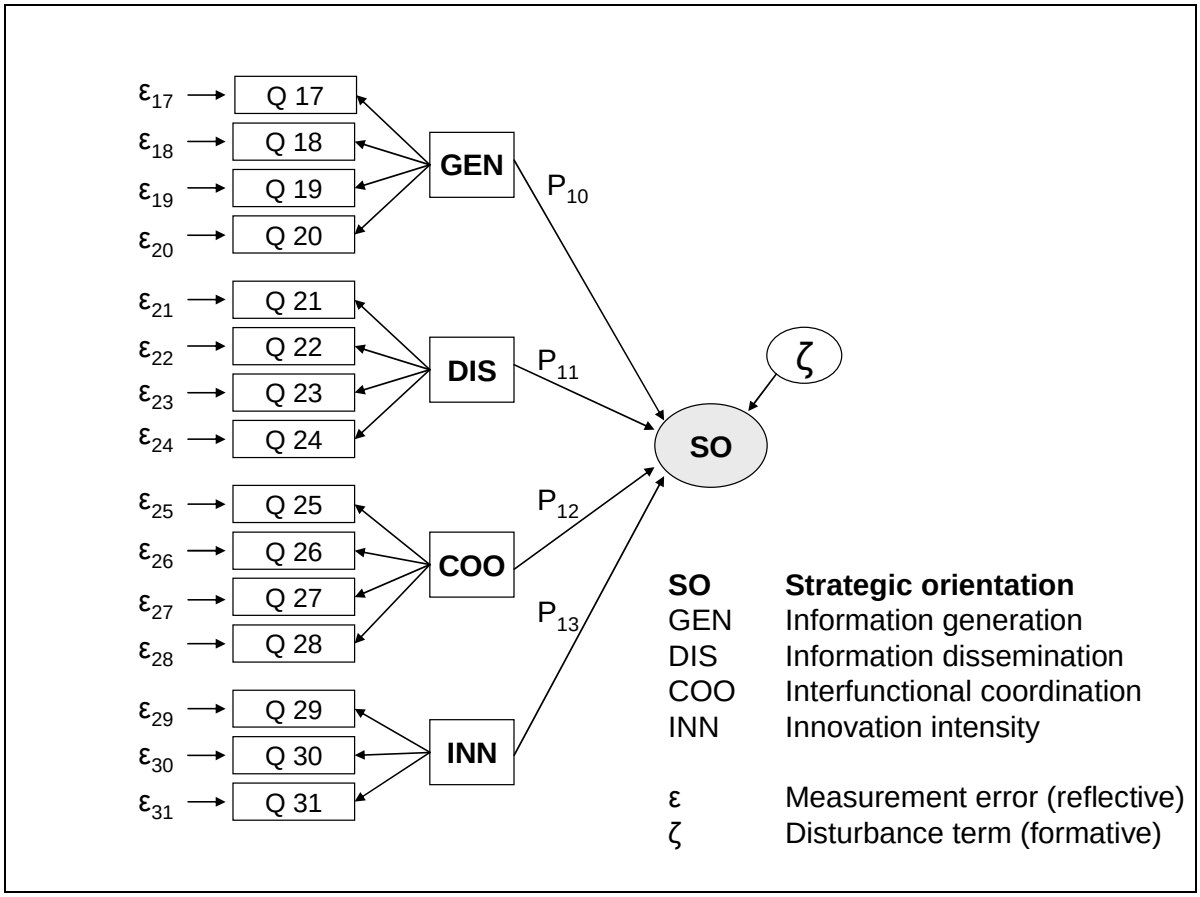
Information generation was measured by four items (questions 17-20) from the scale developed by Jaworski and Kohli (1993).

Information dissemination consisted of four items (questions 21-24) which were adapted from Jaworski and Kohli (1993).

Interfunctional coordination consisted of four items (questions 25-28). The items were derived from the scale developed by Narver and Slater (1990).

Innovation intensity consisted of three items (questions 29-31) which were adapted from Miller and Friesen (1982).

FIGURE 4.5: Measurement model for strategic orientation



Source: Author's own compilation

The propositions for strategic orientation are as follows:

P10: Strategic orientation can be measured by information generation.

P11: Strategic orientation can be measured by information dissemination.

P12: Strategic orientation can be measured by interfunctional coordination.

P13: Strategic orientation can be measured by innovation intensity.

4.4.1.5 Measurement model for entrepreneurial behaviour

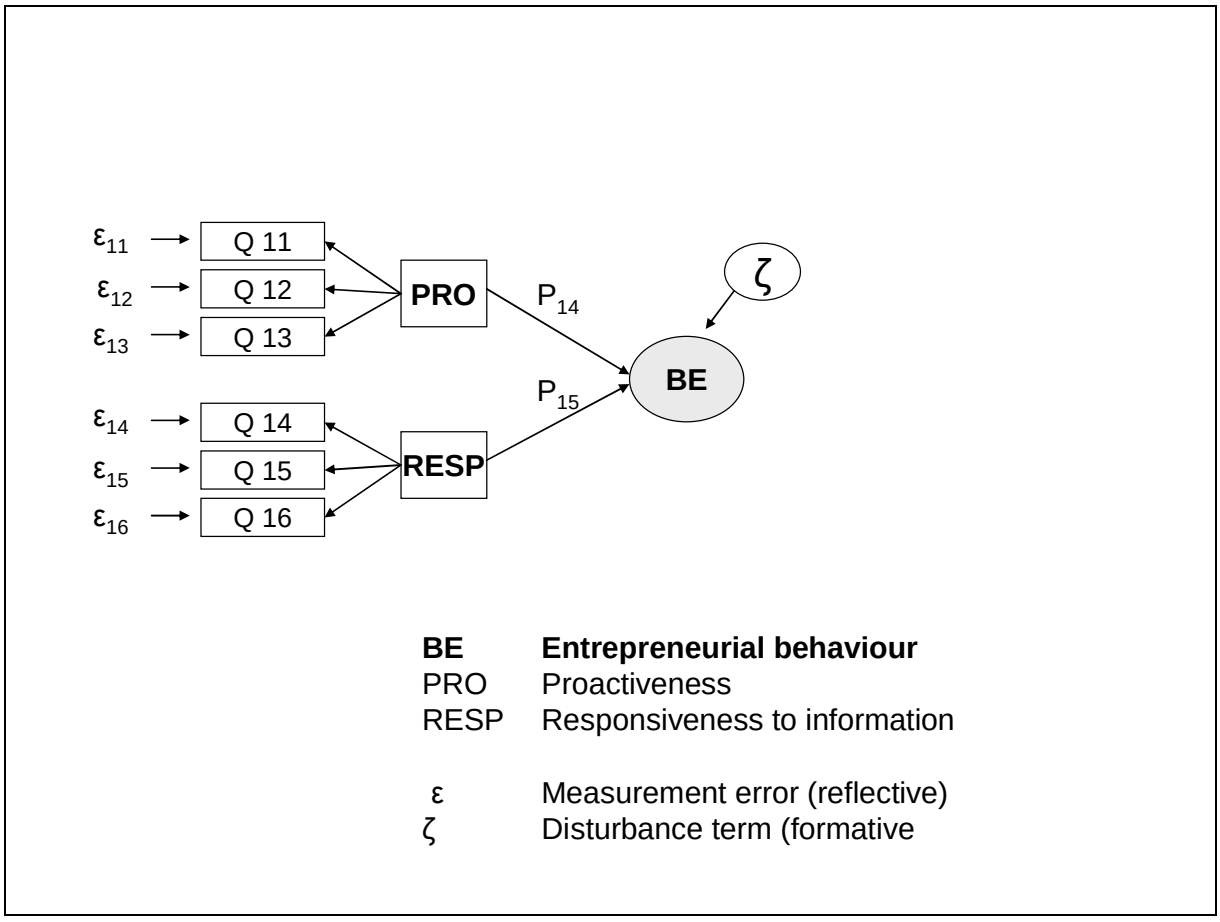
Entrepreneurial behaviour is considered to be a second-order formed attribute which is caused by the two dimensions of proactiveness and responsiveness to information. These two dimensions are first-order eliciting attributes.

An index for entrepreneurial behaviour was developed which consisted of the sum of item scores.

Proactiveness was measured by three items (questions 11-13); items were adapted from Lumpkin and Dess (2001).

The three items used to measure responsiveness to information (questions 14-16) were adapted from Jaworski and Kohli (1993) and Kohli *et al*. (1993).

FIGURE 4.6: Measurement model for entrepreneurial behaviour



Source: Author's own compilation

The propositions for entrepreneurial behaviour are as follows:

P14: Entrepreneurial behaviour can be measured by proactiveness.

P15: Entrepreneurial behaviour can be measured by responsiveness to information.

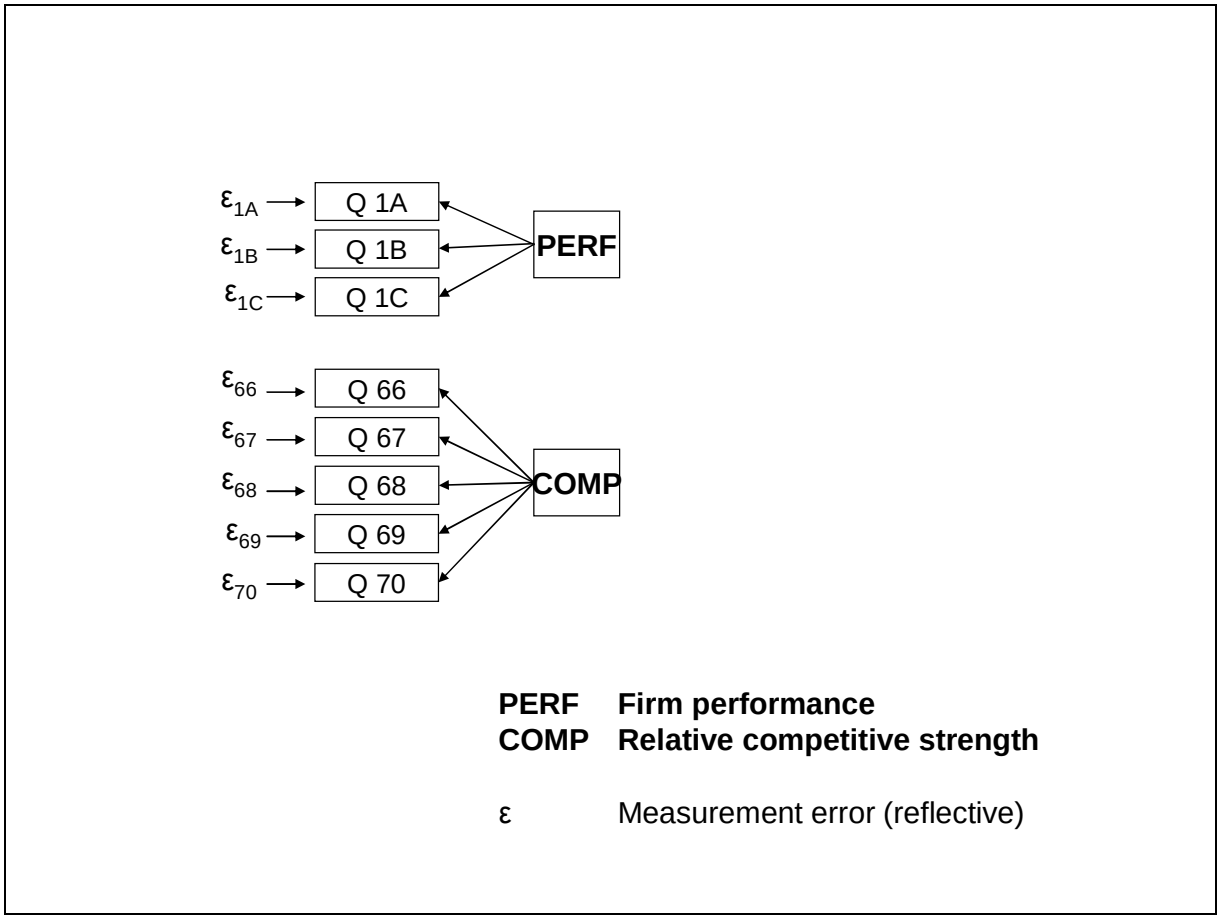
4.4.1.6 Measurement model for firm performance and relative competitive strength

Firm performance and relative competitive strength are considered to be first-order eliciting attributes.
A summed score for each concept, firm performance and relative competitive strength, was developed, which consisted of the sum of its item scores.

Firm performance was measured with three self-constructed items (questions 1A-1C) that captured the perception of respondents on firm performance.

Relative competitive strength was measured with five items (questions 66-70), which were adapted from Burke (1984).

FIGURE 4.7: Measurement model of firm performance and relative competitive strength



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Firm performance and relative competitive strength are outcomes parameters of this study and were hence tested as a part of the structural model in this study.

4.4.2 Structural models

The following section outlines three different hypothesised structural models. The first model investigates a direct effects relationship between the exogenous latent variables and market-driving ability. The second model determines whether the management level as a moderating variable influences the paths between the exogenous latent variables and market driving. In a third model the industry focus of the organisation is considered as a moderating variable.

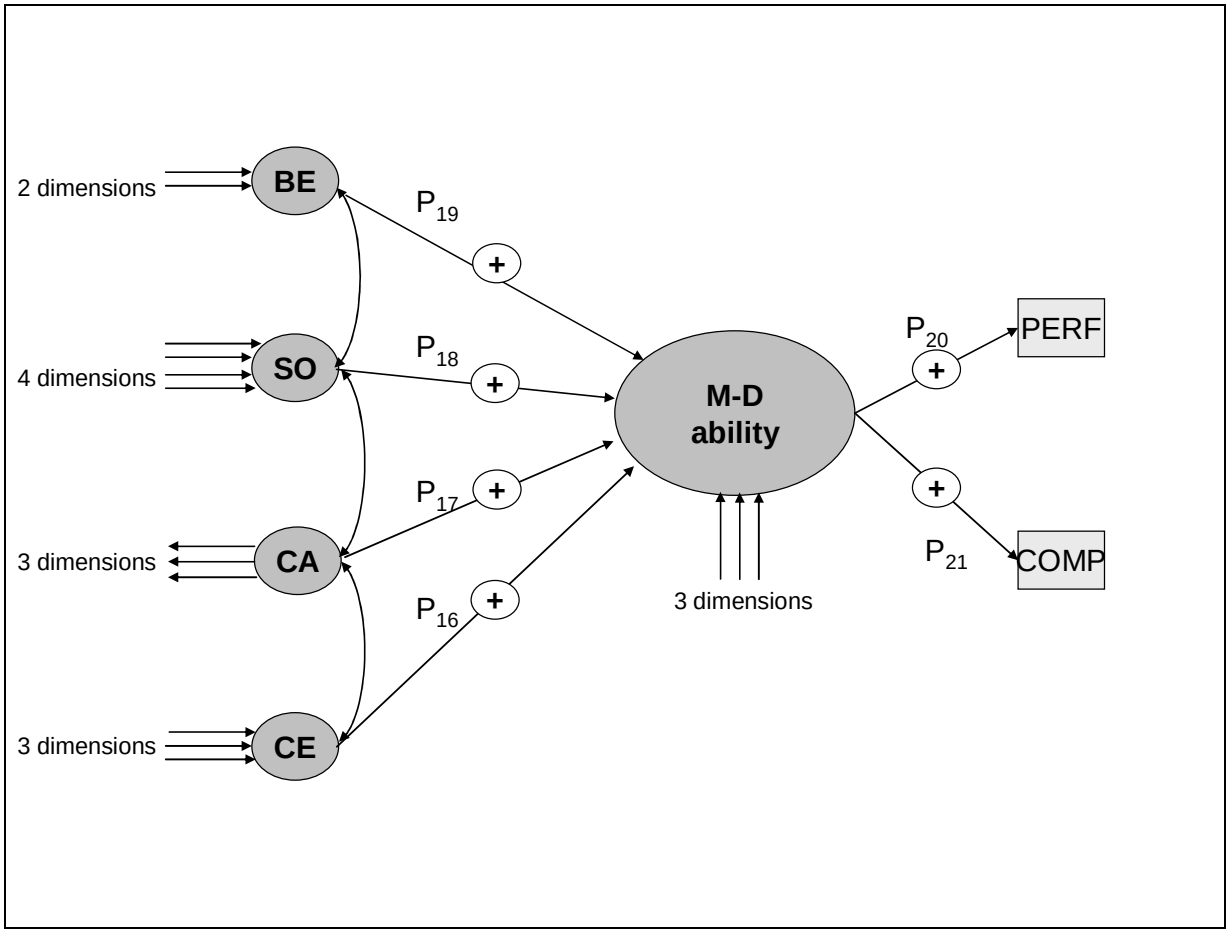
4.4.2.1 Direct effects model (model 1)

It is suggested that the structural model of market driving is a recursive model with linear relationships and uncorrelated disturbance terms.

The exogenous latent variables in the model are corporate entrepreneurial management (CE), entrepreneurial capital (CA), strategic orientation (SO) and entrepreneurial behaviour (BE). The endogenous latent variables are market-driving ability (MD-ability), firm performance (PERF) and relative competitive strength (COMP).

The first structural model (Figure 4.8) presents direct relationships between the latent variables. The double-headed curved arrows between the exogenous latent variables represent an unanalysed relationship. It is acknowledged that the latent variables could be correlated; however, this study is not going to explore if and why they are correlated (Jaccard & Jacoby, 2010:143).

FIGURE 4.8: Direct effects model (model 1)



Source: Author's own compilation

The propositions that derive from the path diagram are stated as follows:

P16: Corporate entrepreneurial management positively influences market-driving ability.

P17: Entrepreneurial capital positively influences market-driving ability.

P18: Strategic orientation positively influences market-driving ability.

P19: Entrepreneurial behaviour positively influences market-driving ability.

P20: Market-driving ability positively influences firm performance.

P21: Market-driving ability positively influences relative competitive strength.

4.4.2.2 Moderating effects model: Management level (model 2)

In the second and third structural models, moderating effects are considered. A moderator is a qualitative or quantitative variable that affects the direction and/or strength of the relationship between an independent and a dependent latent variable (Baron & Kenny, 1986:1174; Helm, Eggert & Garnefeld, 2010:524; Henseler & Fassott, 2010:713).

The structural model considers the influence of management level (top, middle, junior) on the relationship between the exogenous latent variables and market-driving ability.

As previous research (Hornsby *et al*., 2002:260,269) found, upper middle managers perceive key firm internal factors in a different way from lower middle managers. Middle managers' perception of these factors influenced their participation in entrepreneurial endeavours. Therefore it would be interesting to see if a moderating relationship could be found in this study.

For the purpose of this study it was investigated whether the path between the exogenous latent constructs and market driving was influenced by the management level. The specific question that was asked was: "Will the relationship between corporate entrepreneurial management, entrepreneurial capital, strategic orientation, entrepreneurial behaviour and market-driving ability be influenced by the various management levels?"
The direction of the moderating effect was not hypothesised.

The following propositions derive from the second model:

P22: The path between corporate entrepreneurial management and market-driving ability will differ between various levels of management.

P22a: The path between corporate entrepreneurial management and market-driving ability will differ between top management (level 1) and middle management (level 2).

P22b: The path between corporate entrepreneurial management and market-driving ability will differ between middle management (level 2) and junior management (level 3).

P22c: The path between corporate entrepreneurial management and market-driving ability will differ between top management (level 1) and junior management (level 3).

P23: The path between entrepreneurial capital and market-driving ability will differ between various levels of management.

P23a: The path between entrepreneurial capital and market-driving ability will differ between top management (level 1) and middle management (level 2).

P23b: The path between entrepreneurial capital and market-driving ability will differ between middle management (level 2) and junior management (level 3).

P23c: The path between entrepreneurial capital and market-driving ability will differ between top management (level 1) and junior management (level 3).

P24: The path between strategic orientation and market-driving ability will differ between various levels of management.

P24a: The path between strategic orientation and market-driving ability will differ between top management (level 1) and middle management (level 2).

P24b: The path between strategic orientation and market-driving ability will differ between middle management (level 2) and junior management (level 3).

P24c: The path between strategic orientation and market-driving ability will differ between top management (level1) and junior management (level 3).

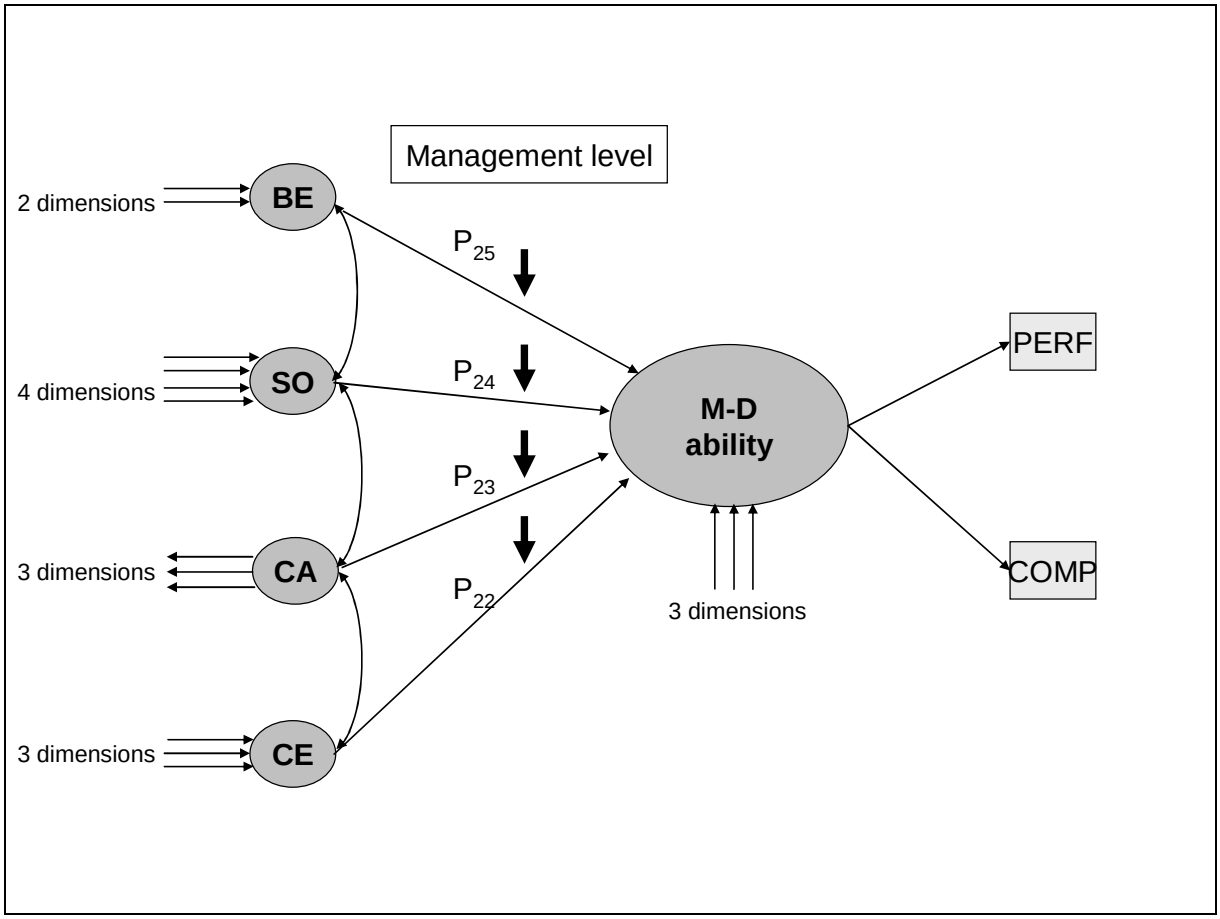
P25: The path between entrepreneurial behaviour and market-driving ability will differ for various management levels.

P25a: The path between entrepreneurial behaviour and market-driving ability will differ between top management (level 1) and middle management (level 2).

P25b: The path between entrepreneurial behaviour and market-driving ability will differ between middle management (level 2) and junior management (level 3).

P25c: The path between entrepreneurial behaviour and market-driving ability will differ between top management (level 1) and junior management (level 3).

FIGURE 4.9: Moderating effects model: Management level (model 2)



Source: Author's own compilation

4.4.2.3 Moderating effects model: Industry focus (model 3)

The third structural model considers the moderating influence of industry focus of organisations (Pharmaceutical manufacturers, medical device manufacturers, pharmaceutical distributors/wholesalers and medical schemes) on the relationship between the latent exogenous variables and market-driving ability. The industry focus of organisations is associated with certain challenges in the respective market.

Previous research (Khandwalla, 1976/77; Zahra & Covin, 1995) found that events in the external environment such as turbulence and dynamism in the market, restrictive access to the market and technological sophistication influenced firms' activities.

Zahra & Covin (1995:52) formed an environmental hostility index which took account of profit margins, growth rates and the number of bankruptcies in order to determine the relationship between corporate entrepreneurship and performance. These

quantitative data are not available for the different business sectors in the South African healthcare industry included in this study. Therefore the influence of industry focus on the paths was determined on a qualitative basis, considering the information that could be obtained by secondary research for the individual business sectors.

The pharmaceutical industry, consisting of manufacturers of originals and generics, is growing at a steady pace with prosperous growth expectations. In 2009 the total pharmaceutical market was estimated at 19.8 billion South African Rand (ZAR), which was a 15% increase on that of 2008 (Aspen Pharma, 2009:3). In 2010 the market was expected to reach 24.56 billion ZAR and by 2014, 35.97 billion ZAR (ReportLinker, 2011).

South Africa's leading pharmaceutical organisations are constantly looking for strategic alliances within the country as well as exploring expansion opportunities into neighbouring African countries (Aspen Pharma, 2009:3; ReportLinker, 2011). The pharmaceutical market will be influenced by patent expirations which will further strengthen the position of generic organisations (ReportLinker, 2011). Furthermore, government's efforts for a national health insurance system will put pressure on the industry for lower cost and increased patient access to medication.

These expectations about market development lead to the hypothesis that pharmaceutical organisations have a strong need to increase their market-driving ability, as the industry is considered highly competitive, with various challenges that impact on growth opportunities and market access.

The South African medical device industry is considered to be dynamic and highly competitive, with national and international players. It is estimated that approximately 95% of devices are imported (Anon., 2010:3). Market growth in the medical device industry is expected at 7.1% from 2010-2015 (Episcom Healthcare Intelligence, 2010). Currently the medical equipment market is not well regulated as there is no comprehensive medical device regulation system (Medicaldevice-network.com, 2009). The positive growth outlook can be considered to enhance firm's activity in market driving. However, the uncertainty regarding the regulatory environment could provide obstacles to market-driving endeavours.

Two of the leading distributors of pharmaceuticals are experiencing continued growth of their business. Innovations regarding distribution systems that increase turnaround times, provide process efficiency and add flexibility to the client, are being introduced. However, a regulation by the government to cap logistical fees provides future challenges to pharmaceutical distributors (UTI Pharma, 2011). Considering this information, the distributors of pharmaceuticals will have a strong need to achieve market driving for their organisations in order to tackle the challenges ahead and ensure continuing success.

The medical schemes environment in South Africa is characterised by consolidations, liquidations and mergers. The number of medical schemes is constantly declining. From 2006 to 2009 the number of open medical schemes decreased by almost 50%, from 218 to 110 schemes. Currently 33 open medical schemes operate in South Africa. The number of principal members increased steadily over the past years with an increase rate of 4.8% for the period 2006-2007 and 2.9% for the period 2008-2009. However, more and more elderly people join medical schemes, with an increase of 0.4% and 0.6% for the periods 2006-2007 and 2008-2009 respectively. Furthermore, spending on hospitals, medical specialists and medicines accounts for the majority of total spending, which increased by 13.7% from 2006 to 2007 and by 18% from 2008 to 2009. (Council of Medical Schemes, 2009:123-125; 2010:157-165).

Based on this information it can be assumed that medical schemes need to increase their activities towards market driving in order to stay competitive and tackle the challenges of rising healthcare costs and an ageing member portfolio. However, it can also be assumed that, based on the rising cost and the aspirations of the government to introduce a national healthcare system, medical schemes will resign and will not engage in market-driving activities.

It is hypothesised that the industry focus will impact on the paths between the dimensions and market driving. Considering the opportunities and challenges of each industry sector, the direction of the effect cannot be specified.

P26: The path between corporate entrepreneurial management and market-driving ability will differ for various industries.

P26a: The path between corporate entrepreneurial management and market-driving ability will differ between pharmaceutical manufacturers and medical device manufacturers.

P26b: The path between corporate entrepreneurial management and market-driving ability will differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

P26c: The path between corporate entrepreneurial management and market-driving ability will differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

P26d: The path between corporate entrepreneurial management and market-driving ability will differ between pharmaceutical manufacturers and medical schemes.

P26e: The path between corporate entrepreneurial management and market-driving ability will differ between medical device manufacturers and medical schemes.

P26f: The path between corporate entrepreneurial management and market-driving ability will differ between pharmaceutical distributors/wholesalers and medical schemes.

P27: The path between entrepreneurial capital and market-driving ability will differ for various industries.

P27a: The path between entrepreneurial capital and market-driving ability will differ between pharmaceutical manufacturers and medical device manufacturers.

P27b: The path between entrepreneurial capital and market-driving ability will differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

P27c: The path between entrepreneurial capital and market-driving ability will differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

P27d: The path between entrepreneurial capital and market-driving ability will differ between pharmaceutical manufacturers and medical schemes.

P27e: The path between entrepreneurial capital and market-driving ability will differ between medical device manufacturers and medical schemes.

P27f: The path between entrepreneurial capital and market-driving ability will differ between pharmaceutical distributors/wholesalers and medical schemes.

P28: The path between strategic orientation and market-driving ability will differ for various industries.

P28a: The path between strategic orientation and market-driving ability will differ between pharmaceutical manufacturers and medical device manufacturers.

P28b: The path between strategic orientation and market-driving ability will differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

P28c: The path between strategic orientation and market-driving ability will differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

P28d: The path between strategic orientation and market-driving ability will differ between pharmaceutical manufacturers and medical schemes.

P28e: The path between strategic orientation and market-driving ability will differ between medical device manufacturers and medical schemes.

P28f: The path between strategic orientation and market-driving ability will differ between pharmaceutical distributors/wholesalers and medical schemes.

P29: The path between entrepreneurial behaviour and market-driving ability will differ for various industries.

P29a: The path between entrepreneurial behaviour and market-driving ability will differ between pharmaceutical manufacturers and medical device manufacturers.

P29b: The path between entrepreneurial behaviour and market-driving ability will differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

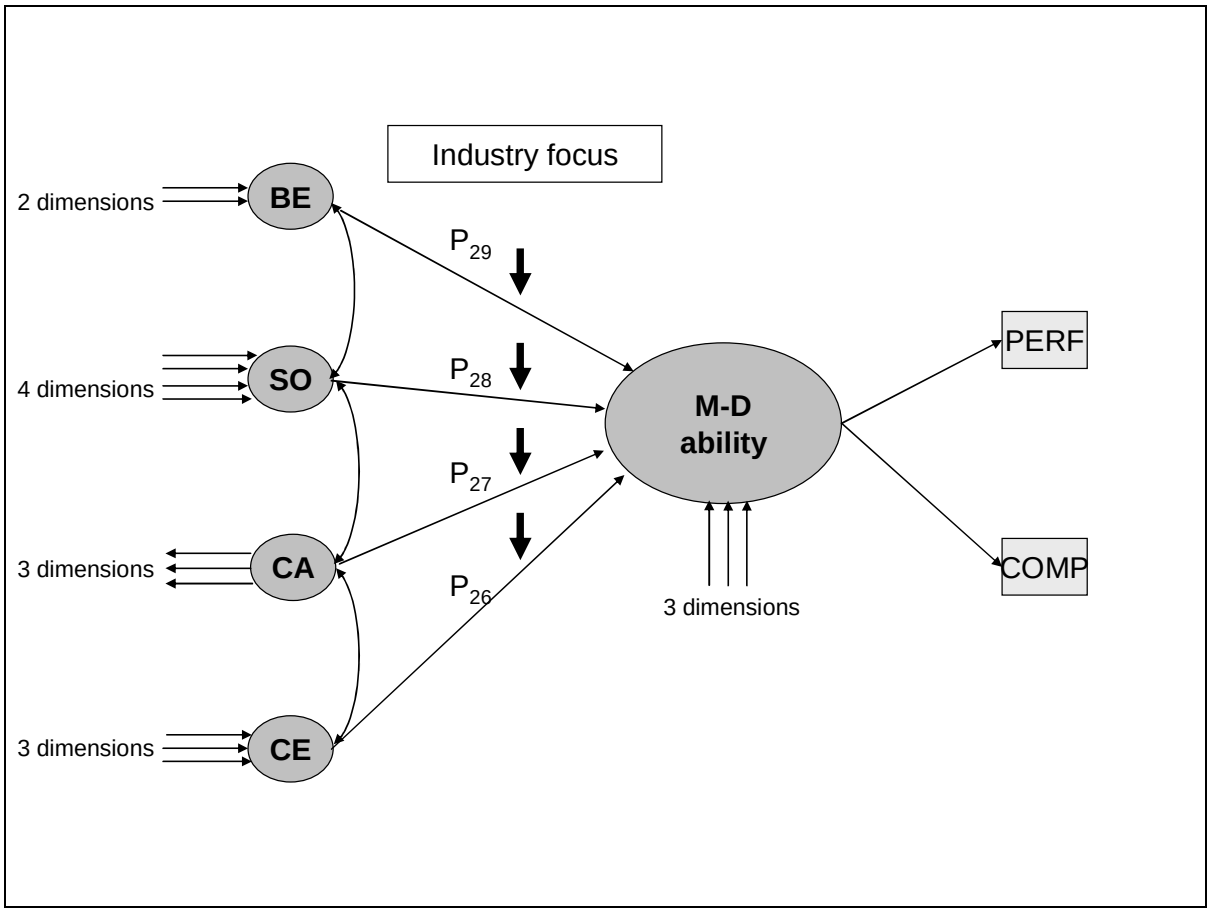
P29c: The path between entrepreneurial behaviour and market-driving ability will differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

P29d: The path between entrepreneurial behaviour and market-driving ability will differ between pharmaceutical manufacturers and medical schemes.

P29e: The path between entrepreneurial behaviour and market-driving ability will differ between medical device manufacturers and medical schemes.

P29f: The path between entrepreneurial behaviour and market-driving ability will differ between pharmaceutical distributors/wholesalers and medical schemes.

FIGURE 4.10: Moderating effects model: Industry focus (model 3)



Source: Author's own compilation

4.5. CONCLUSION

The chapter provided a literature overview relating to measuring instruments that have been used in past research and are relevant for this study. The instruments' dimensions and their reported reliability and validity measures were presented.

Relevant literature on statistical modelling was also presented. It was explained that the two parts of the model, the measurement model and the structural model, need to be specified in order to achieve complete model specification. The measurement model, which is certainly the more difficult part to specify, can consist of reflective or

formative relationships between a construct and its dimensions and the dimensions with their indicators. The impact of model misspecification was also discussed.

The third part of this chapter addressed the development of a model for market-driving ability in corporate entrepreneurship. In a first step the measurement model for each construct was developed. Measurement model specification followed the guidelines outlined by Rossiter (2002). The constructs of market-driving, corporate entrepreneurial management, strategic orientation, and entrepreneurial behaviour were defined with reflective first-order indicators and formative second-order dimensions. Entrepreneurial capital was defined with reflective first-order indicators and reflective second-order dimensions. Performance and relative competitive advantage were considered to consist of first-order reflective indicators.

In a second step the structural models for this study were specified. The first model represents a direct effects model and considers that the exogenous constructs: corporate entrepreneurial management, entrepreneurial capital, strategic orientation and entrepreneurial behaviour, directly and positively influence market-driving ability. It was also specified that market-driving ability positively influences relative competitive strength and firm performance.

The second model considers the moderating effect of the management level on the structural relationships. The third model considers the moderating effect of industry focus on the relationships between the exogenous latent constructs and market-driving ability.

The chapter concluded with the explicit specification of propositions that derive from the specified path diagrams.

CHAPTER 5:
RESEARCH DESIGN AND METHODOLOGY OF THE STUDY

5.1 INTRODUCTION

The main components of market driving have been related to market sensing, influencing of customer preferences and alliance formation activities. Firm-internal activities that influence a market-driving ability are entrepreneurial behaviour, strategic orientation, entrepreneurial capital and corporate entrepreneurial management. The outcomes of a market-driving ability have been described as increasing firm performance and relative competitive advantage. The building of a theoretical model of all these components has been described in chapter four.

The management question that needs to be addressed is: Can market driving and market-driving ability and its influencing factors be assessed in the South African healthcare industry?

In order to address the management question from an empirical perspective, the following chapter outlines the research problem and objectives of this study as well as the research methodology. Aspects that are included in the discussion of the research methodology are the research design, sampling procedures, data collection and data analysis approaches.

5.2 RESEARCH PROBLEM

In chapter two it was pointed out that entrepreneurship and marketing research share a substantial amount of commonality. Various concepts relating to innovation, flexibility, change and opportunities, as well as managerial and organisational principles, are commonly used in both disciplines. One of the goals of both disciplines is to understand and describe firm performance and relative competitive strength. Research at the interface is especially concerned with the explanation of exceptional performance, which cannot be explained with the current understanding

of a market-driven organisation. Exceptional performance has been associated with a firm's ability to achieve market driving (Kumar *et al*., 2000; Schindehutte *et al*., 2008).

It has been argued that market driving is a specific organisational ability that requires several activities to be able to shape, change and create the market structure and/or the behaviour of market players. It has also been stated that in order to pursue market driving, certain firm-internal capabilities need to be demonstrated and the outcomes of a market-driving approach result in firm performance and relative competitive strength.

The purpose of this study is to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

The management question that is derived from this is: Can market driving and market-driving ability and its influencing factors be assessed in the South African healthcare industry?

From the management question the following more specific research questions can be formulated (Cooper & Schindler, 2008:118):

- Can market driving be measured by assessing a firm's activities in market sensing, influencing customer preferences and alliance formation?
- Can internal factors such as a firm's orientation towards corporate entrepreneurial management; entrepreneurial capital; strategic orientation and entrepreneurial behaviour predict market-driving ability?
- Can firm performance and relative competitive strength be related to the market-driving ability of a firm?
- Do moderating factors such as management level and industry focus influence the strength of the relationship between the internal factors and market-driving ability?

The construct of market driving, its influencing factors and the outcomes are currently not well understood. So far no formal study has been conducted in South Africa that

addresses the measurement of market driving and determines influencing factors on market-driving ability and its consequences.

5.3 RESEARCH OBJECTIVES

The primary research objective is to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

The primary research objective is supported by secondary objectives which are classified into objectives that can be achieved by means of literature study and by means of an empirical case study.

The literature study determined:

- The link between entrepreneurship and marketing research at the interface;
- The constructs and concepts that are common to the disciplines of marketing and entrepreneurship;
- Various research studies that investigate market-driving activities in firms;
- Constructs and concepts that have been taken from the marketing and entrepreneurship field to explain market driving; and
- Constructs and concepts from both disciplines that are considered to impact on market-driving ability.

On the basis of the literature study a conceptual model of market-driving ability in corporate entrepreneurship was developed. Statistical modelling by means of a case study was used to determine the predictive quality of the model.

The empirical study was to determine:

- Whether market driving can be measured by market sensing, influencing of customer preferences and alliance formation;
- Which firm-internal factors influence market-driving ability;
- Whether market-driving ability influences different outcome parameters; and
- Whether moderating variables influence the relationship between firm-internal factors and market-driving ability.

The scope of the research is the South African healthcare industry, which comprises four different segments: the pharmaceutical industry, medical device manufacturers, wholesalers and distributors of pharmaceuticals and open medical schemes. The research did not consider environmental factors that might influence a firm's decision making, such as the current development of a national health insurance system in South Africa.

5.4 HYPOTHESES

In chapter four, propositions for this study were outlined. Cooper and Schindler (2008:64) state that propositions are statements about concepts that may be true or false. Once the propositions are formulated for empirical testing, they are formulated as hypothesis. Hypotheses are more tentative in nature.

The hypotheses for this study were derived from the main purpose of this study: to build a model to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability. Jaccard and Jacoby (2010:170) emphasise that the path diagram is the essence of multiple hypotheses.

The null hypothesis reflects the concept that there is no difference between two groups, whereas the alternative hypothesis states that there is some difference. If the null hypothesis can be rejected, it signifies support for the alternative hypothesis. The alternative hypotheses can be formulated as exploratory or directional. Exploratory hypotheses do not postulate any direction of the difference between two groups, whereas directional hypotheses do (Diamantopoulos & Schlegelmilch, 2000:132-133).

For the purpose of this study, both exploratory and directional hypotheses were formulated. Exploratory hypotheses are used for the measurement models (H1 to H15) and the moderating effects models considering management level (model 2) (H22 to H25) and industry focus (model 3) (H26 to H29). Directional hypotheses (H16 to H21) are used for the structural direct effects model (model 1).

The hypotheses were tested with SmartPLS (Ringle, Wende & Will, 2005). The procedures are outlined in section 5.5.5.2.

The hypotheses for this study were outlined in chapter one.

5.5 RESEARCH METHODOLOGY

The following paragraphs outline the research methodology, which comprises the research design, sampling, data collection and data analysis.

5.5.1 Research design

The study was designed as a formal study in the South African healthcare industry. The two parts of the study were the literature review and the empirical study. The literature study provided insights into the field of research, helped to clarify the boundaries of the research, and identified the relevant constructs and concepts that were used to formulate the conceptual framework of market-driving ability in corporate entrepreneurship.

The literature study determined:

- The link between entrepreneurship and marketing and research at the interface;
- The constructs and concepts that are common to the disciplines of marketing and entrepreneurship;
- Various research studies that have investigated market-driving activities in firms;
- Constructs and concepts that have been taken from the marketing and entrepreneurship field to explain market driving; and
- Constructs and concepts from both disciplines that are considered to impact on market-driving ability.

The empirical study covered the conceptual framework, which consisted of measures of market driving and firm-internal influencing factors, moderators and outcomes of market-driving ability. The conceptual framework was transformed into a statistical model. The generated data gave information about the measure of market driving. Furthermore, firm-internal factors that influenced market-driving ability were

determined. Moderating effects on the relationship between firm-internal factors and market-driving ability could be identified. Finally, the influence of market-driving ability on outcomes parameters could be established.

5.5.1.2 Purpose of the study

The purpose of the study is fourfold. First, the study aims to give an understanding of the measurement of market driving in corporate entrepreneurship. Second, firm-internal influencing factors on market-driving ability are determined. Third, moderating effects, such as the management level and the industry focus, on the relationship between firm-internal factors and market-driving ability can be identified. Finally, the outcomes of a market-driving ability are assessed, considering firm performance and relative competitive strength.

The study could provide findings to organisations that wish to assess and increase their level of market driving in their business and hence provide a starting point for their internal analysis.

5.5.1.3 Time dimension

According to Bryman and Bell (2007:55), a cross-sectional study requires more than one case, takes place at a certain time, includes quantitative data and examines patterns of association.
The empirical, cross-sectional study was conducted in South Africa between August and December 2010.

5.5.1.4 Topical scope

The topical scope of the study refers to its breadth and depth (Cooper & Schindler, 2008:144). Statistical studies try to cover population characteristics and hence the breadth, whereas case studies are more concerned with an in-depth understanding of the context and the relationships (Cooper & Schindler, 2008:144). This study used a case-study approach. The construct of market driving is so far not well understood

and hence insights into the measurement of the construct and its relationships with other constructs are important.

5.5.1.5 Research environment

The research environment refers to studies that are conducted in the actual environment under so-called field conditions and studies that are conducted under laboratory conditions (Cooper & Schindler, 2008:145).

The study took place under field conditions in the South African healthcare industry.

5.5.1.6 Participants' perception

Participants' perceptual awareness influences the response behaviour. Participants might change their response behaviour when they notice that they are being observed or questioned (Cooper & Schindler, 2008:145). Sometimes respondents might answer questions according to what is considered socially acceptable.

Although respondents were asked to answer every question according to their personal perception, it needs be considered that respondents in this study might have adapted their response behaviour. Further, respondents were assured that there were no correct or incorrect answers and that confidentiality of all their responses was guaranteed. However, it cannot be established whether participants changed their response behaviour in the interviews.

5.5.2 Sampling

A sample is considered as a subset of a given population of interest. Reasons for using a sample instead of a census of the whole population of interest are mainly attributed to cost and time issues (Cooper & Schindler, 2008:375; Diamantopoulos & Schlegelmilch, 2000:10-11).

The sample for this study consisted of employees in different management levels in the South African healthcare industry.

When a sample is drawn from the population, a sampling error occurs which describes the difference between the results based on the sample versus the results that would have been obtained if the population was investigated. The sampling error can be statistically evaluated if the sample was obtained by means of probability sampling. The basic sampling techniques are described as probability and non-probability sampling. Probability sampling follows a procedure whereby every respondent in the defined population has a non-zero chance of getting selected. Non-probability sampling leaves the sample selection to the discretion of the researcher (Cooper & Schindler, 2008:379-380; Diamantopoulos & Schlegelmilch, 2000:12-13).

Non-probability sampling is frequently used (Levy & Lemeshow, 2008:19). Reasons for choosing non-probability sampling can be attributed to cost and time issues. Whereas probability sampling requires more planning to ensure that the correct respondents are identified, non-probability sampling does not require these procedures. However, from non-probability sampling no generalisations about population parameters can be made (Cooper & Schindler, 2008:396-397).

The methods of non-probability sampling are convenience sampling, purposive sampling and snowball sampling. In convenience sampling, the researcher is free to choose whom to interview. Purposive sampling can be judgement sampling or quota sampling. Judgement sampling requires the respondent to fulfil some criteria. In quota sampling, several criteria that are found in the population are applied to the sample, for example the distribution between male and female employees. Snowball sampling can be applied in research situations where respondents are difficult to identify and contact. Respondents that have been identified based on previous probability or non-probability methods refer the research to persons with similar characteristics (Babbie, 2010:193; Cooper & Schindler, 2008:397-399).

The study used a non-probability sample using purposive sampling and snowball sampling. From an initial list with contact details of persons, the relevant industries and the relevant management level were identified. Additionally, screening criteria of minimum turnover and minimum number of employees were introduced to ensure that the firms included represented medium to large sized enterprises in South Africa. In a second step, a snowball sampling technique was applied. Persons from the

original list were asked to refer other colleagues from their organisation. The reason for choosing a non-probability sampling technique was that respondents in management positions are difficult to identify and to contact.

In order to determine the response rate for this study the following formula was applied (Bryman & Bell, 2007:196).

$$\frac{\text{Number of usable questionnaires}}{\text{Total sample – unsuitable or uncontactable members of the sample}} \times 100$$

In total, 6015 contacts were made, of which 602 contacts did not meet the screening criteria, either regarding the management level or the organisational characteristics relating to minimum turnover or number of employees. Out of the remaining 5413 contacts, 962 interview appointments could be made, which resulted in 328 conducted interviews. The reason for the low number of realised interviews was related to busy work schedules which prevented respondents from participating. Hence the response rate for this study was:

$$\frac{328}{6015 - 5053} \times 100 = 34.1\ \%$$

5.5.3 Data collection

Data collection involves the gathering of secondary and primary data. Secondary data can be gathered by means of a literature research in books, journals, and reports. Electronic databases available over the internet provide access to full text articles in electronic format (Bryman & Bell, 2007:107-108). This study made much use of electronic databases to identify relevant articles.

The primary data can be collected by using a communication approach or observation (Cooper & Schindler, 2008:214). This study used a communication approach in the form of a fully structured survey. The survey was conducted using telephone interviews.

The advantages of telephonic surveys have been described as follows (Cooper & Schindler, 2008:223).

- They are more cost efficient than personal interviews.
- They make it possible to cover a wide geographical area.
- They offer better access to hard-to-reach participants through repeated contacts.

The major disadvantages are described as (Cooper & Schindler, 2008:223):

- Lower response rate than personal interviews.
- Limitations to the interview length.
- The fact that illustrations cannot be used.

In communication research, various sources of error can occur, such as interviewer error and participant error (Cooper & Schindler, 2008:215).

Interviewer error occurs when the interviewer cannot achieve full participant cooperation, which then results in a sampling error, since the sample tends to be biased. If the interviewer fails to record answers accurately or completely, a data entry error occurs. Other interviewer errors include cheating, influencing respondents' behaviour or the failure to establish an appropriate environment (Cooper & Schindler, 2008:218). Although interviewer error cannot be ruled out for this study, precautions were taken to avoid interviewer error. Answers were thoroughly recorded, quality checks were conducted and respondents were ensured anonymity and confidentiality.

Participant errors occur if the respondent does not have the required information, does not understand his or her role in the interview or lacks motivation to cooperate (Cooper & Schindler, 2008:219-221). A non-response error occurs when the person does not provide usable responses and differs from those respondents who do respond on the characteristics of interest. In order to generalise findings it is necessary to report non-response error (Dooley & Lindner, 2003:101).

To determine non-response error, three different methods are described, of which at least one should be applied to research (Armstrong & Overton, 1977:396-397). First,

results from the survey can be compared with known values from the population. Second, subjective estimates considering, for example, socioeconomic differences between respondents and non-respondents, can be conducted. Third, extrapolation methods can be used. Extrapolation assumes that late respondents behave in a similar way to non-respondents. A comparison can be conducted between answers of respondents that answer in the early stages of the data collection with those of respondents that participate in later stages (Armstrong & Overton, 1977:397; Dooley & Lindner, 2003:102-103).

In order to test for non-response error in this study, the following H_0 hypothesis was tested using SPSS V.9.0 (2004): There is no difference between the answers of early versus late respondents with regard to the individual questions. The hypothesis was tested using Wilks' lambda (Guthrie, Spell & Ochoki Nyamori, 2002:190). The analysis showed no difference between early versus late respondents (Wilks' lambda = 0.646, $p > 0.10$). Although non-response error cannot completely be ruled out, this result gives more confidence in external validity.

5.5.3.1 Instrument used to collect empirical data

A structured questionnaire was used to collect the empirical data.

The questionnaire started with questions referring to informed consent and assuring confidentiality of all responses. Screening questions referring to the level of management, the industry focus of the organisation, and turnover and number of employees were included to ensure that the sample consisted of relevant subjects and included firms representing medium to large enterprises. Biographical information was also collected. These six questions related to gender, age, industry focus of the organisation, the department the respondent currently worked in, the number of years of experience in the healthcare industry and the number of years the respondent had worked in the current position.

The constructs and concepts of the market-driving model have been outlined in chapter four.

Concepts refer to characteristics associated with certain objects, situations or behaviour. Constructs refer to abstract concepts which are invented for research or theory-building purposes. Constructs are built of more concrete concepts, especially when the object of the study cannot directly be observed (Cooper & Schindler, 2008:57-58). Diamantopoulos and Schlegelmilch (2000:21) note, however, that in research constructs and concepts are often used interchangeably.

For the purpose of this study, constructs refer to the following independent latent variables: corporate entrepreneurial management, entrepreneurial capital, strategic orientation, entrepreneurial behaviour. Each of these constructs consists of several concepts that are measured by observed variables (indicators). Corporate entrepreneurial management is measured as a formative construct which is formed by the three concepts of risk-taking, management support and the organisational structure of the firm. Entrepreneurial capital is measured as a reflective construct consisting of human, social and financial capital. Strategic orientation is measured as a formative construct. It consists of information generation, information dissemination, interfunctional coordination and innovation intensity. Entrepreneurial behaviour is measured as a formative construct comprising proactiveness and responsiveness to information.

The dependent construct in the model is market-driving ability. Market-driving ability represents the structural part of the model which is influenced by the independent constructs. Market driving represents the measurement part and consists of activities relating to market-sensing, influencing of customer preferences and alliance formation. The impact of market-driving ability on two reflective outcome parameters, firm performance and relative competitive strength was determined.

5.5.3.2 Measurement of the research instrument

The process of measurement involves assigning symbols to characteristics of persons, objects or events. The symbols are most often numbers to allow for statistical manipulation of the data (Diamantopoulos & Schlegelmilch, 2000:22-23).

Carifio and Perla (2007:107-109) emphasise that a clear distinction needs to be made between a scale and response formats. Individual items are judged on a response format which may be a nominal, ordinal, interval or ratio data type. A measurement scale consists of a group of items; however, it has a more complex meaning than the items that form the scale.

The following paragraphs outline the Likert response format and the optimal number of scale points. The type of empirical data that Likert scales produce is discussed.

One of the response formats and scales most often used in various research disciplines is the Likert response format and the Likert scale. Likert (1932:14) suggested a summed scale for the assessment of attitudes in surveys, where items are judged on a response format with five alternatives, ranging from “strongly approve” to “strongly disapprove” (Clason & Dormody, 1994:31).

Various research studies have tried to identify the optimal number of scale points that achieves maximum reliability and validity in the Likert response format (Chang, 1994; Lissitz & Green, 1975; Matell & Jacoby, 1972; Preston & Colman, 2000; Weng, 2004). The studies showed controversial results. Preston and Colman (2000:2), Lissitz and Green (1975:10), Chang (1994:205) and Weng (2004:956) report that some studies show that reliability is independent of the number of response categories; others show that there is an impact. Different studies find support for any number of response categories between two and 11 and even 100. Whereas reliability is an important issue addressed in various studies, validity is examined to a lesser extent, and the aspect of respondent preferences or respondent ability is discussed even less often (Preston & Colman, 2000:3).

Lissitz and Green (1975:12) and Chang (1994:212) find that it is possible to increase internal consistency artificially by increasing the number of scale points. However, this effect levels off after five to six scale points. Maximising reliability possesses the risk of jeopardising construct validity. Churchill and Peter (1984:370) observe that if items are too similar, the risk of construct under-identification is high, since not all aspects of the construct might be captured.

Another important aspect to consider in the design of response format is respondents' preferences and their capabilities. Preston and Colman (2000:9-10) find that response categories of five, seven and 10 are most preferred by respondents. Weng (2004:959) notes that a response format needs to consider the respondents' capability to discriminate. Increasing the number of scale points does not necessarily lead to better discrimination. Weng (2004:969) found that respondents at the level of college students should provide consistent results with seven and six-point response formats. Preston and Colman (2000:13) argue that five-point scales are quick and easy to use.

Although a unanimous answer from previous studies on the optimum number of scale points in the response format could not be obtained, the main aspects considered in the design of the response format for this study were reliability and validity of scale items, as well as respondents' preferences.

The study mainly used items that had been used in previous studies that showed acceptable reliability and validity results. Items taken from previous studies used a seven-point response format (Barringer & Bluedorn, 1999:428; Khandwalla, 1977:639; Lumpkin & Dess, 2001:439; Miller & Friesen, 1982:8; Narver & Slater, 1990:23) a six-point response format (Narver *et al.,* 2004:340) or a five-point response format (Hornsby *et al*., 2002:263; Jaworski & Kohli, 1993:59).

For the purpose of this study four pre-tests were conducted with persons in the South African healthcare industry. The purpose of the pre-tests was threefold. First, respondents were asked to complete the full questionnaire and were timed while doing so. Respondents needed approximately 15 minutes to complete the questionnaire. Second, an item purification process took place. Respondents were asked to check each item for understanding and appropriate wording. Suggestions that resulted were incorporated into the final questionnaire. Third, respondents were asked with which response format they would feel most comfortable. All four persons preferred a five-point response format, which was consequently applied.

The construct of corporate entrepreneurial management was measured by a total of 10 questions measuring the concepts of risk-taking, management support and

organisational structure. The five-point response format used anchor labels where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree.

Entrepreneurial capital consisted of the concepts of human, social and financial capital and used a total of 9 questions. The five-point response format used anchor labels where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree.

Strategic orientation was measured by a total of 15 questions covering the concepts of information generation, dissemination, interdepartmental coordination and innovation intensity. The five-point response format used anchor labels where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree.

Entrepreneurial behaviour was measured by six questions relating to proactiveness and responsiveness to information. The five-point response format used anchor labels where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree.

Market driving was measured by partly self-constructed questions. A total of 14 questions were used to assess market sensing, influencing of customer preferences and alliance formation.

For market-sensing activities a five-point response format with anchor labels was used ranging from 1=never used, 2=seldom used, 3=neither never used nor very frequently used, 4=frequently used, 5=very frequently used.

Customer preferences and alliance formation used a five-point response format with anchor labels where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree.

Relative competitive strength was measured by five questions using the five-point response format with anchor labels ranging from 1=very similar, 2=similar, 3=neither similar nor different, 4=different, 5=very different.

Firm performance was measured by three questions using the five-point response format with anchor labels ranging from 1=decreased significantly, 2=decreased, 3=remained the same, 4=increased, 5=increased significantly.

In today's research Likert scales are considered to produce ordinal data. However, when it comes to data analysis, instead of conducting non-parametric tests, means are calculated and parametric tests are performed (Jamieson, 2004:1212). The following paragraphs demonstrate the essential differences between Likert response formats and Likert scales.

The Likert response format is considered to be ordinal. The Likert scale, however, produces, empirically, interval-level scales, which allow for the use of parametric tests (Carifio & Perla, 2007:110,115; Parker, McDaniel & Crumpton-Young, 2002:4). In order to understand this at first sight contradictory claim it is necessary to draw a clear distinction between the response format and the measurement scale. These are considered to be two very different things, based on the properties and the levels they measure. The response format delivers a judgement of a single item (micro level), whereas the measurement scale (macro level) considers a minimum group of items which are analysed (Carifio & Perla, 2007:108,110). The derived indices from a measurement scale are conceptually and empirically different from the item-responding format (Carifio & Perla, 2007:108; Norman, 2010:629). If the derived data are reasonably distributed inferences about means and differences can be drawn. Even in situations of non-normal distributions or skewness various tests such as analysis of variance or the Pearson Correlation Coefficient are very robust (Carifio & Perla, 2007:110-111; Carifio & Perla, 2008:1150; Norman, 2010:629).

Carifio (1978 in Carifio & Perla, 2007:109) showed in a study that data produced from a response format of a 100 millilitre line with two to seven anchor points was empirically linear and interval in character. The same study was applied using a response format of five to seven scale points. The produced data were compared

with the first study and shown to be highly correlated. This lends support to the conclusion that Likert scales produce empirically interval data.

For the purpose of this study a Likert response format and Likert-type scales were used, which were considered to produce empirical interval data.

Some of the questions were negatively worded, which required reverse coding before analysis could be conducted (Spector, 1992:22). The scaling for the following questions was reversed: questions 2, 9, 10, 12, 13, 18, 23, 31, 36, 54, 57.

5.5.3.3 Reliability and validity of the measuring instrument

The extent to which measures are free of systematic and random error indicates the validity of the measure. Reliability is indicated by an absence of random measurement error (Cooper & Schindler, 2008:293; Diamantopoulos & Schlegelmilch, 2000:33).

Reliability is concerned with the reproduction of consistent measures. Reliability considers stability, internal reliability and inter-rater consistency (Bryman & Bell, 2007:162-164). Stability is assessed with the test-retest method, which requires the administration of the same test to the same sample at a different time (Bryman & Bell, 2007:162; Cooper & Schindler, 2008:293). Due to the cross-sectional characteristic of this study, test-retest reliability could not be determined.

Internal reliability or internal consistency refers to the assessment of homogeneity among items. Various tests can be performed to determine reliability (Bryman & Bell, 2007:164; Cooper & Schindler, 2008:294).

Reliability is a prerequisite for validity, but it is not a sufficient condition (Diamantopoulos & Schlegelmilch, 2000:33; Nunnally & Bernstein, 1994:90). Validity describes the extent to which the measures of a concept actually measure that concept. Various types of validity can be distinguished. Internal validity includes construct validity, content validity and criterion related validity (Babbie, 2010:150; Bryman & Bell, 2007:164; Cooper & Schindler, 2008:290).

In order to determine the appropriate reliability and validity measures for this study, it is important to recall the different measurement types for constructs and concepts. The parts of the construct needed to be assessed differently, because some of the constructs, such as corporate entrepreneurial management, strategic orientation, entrepreneurial behaviour and market driving were constructed as first-order reflective, second-order formative constructs (Burke Jarvis *et al*., 2003:205). Further, it needs to be considered that reliability and validity were assessed as part of the overall statistical model which used partial least squares path modelling. The properties of partial least squares path modelling (PLS-PM) are outlined in section 5.5.5.2.

The reliability of reflective concepts can be assessed by composite reliability and outer standardised loadings. Compared with Cronbach's alpha, composite reliability considers that indicators have different loadings which measure their contribution to the explanation of the latent variable. However, the interpretation of composite reliability is the same as for Cronbach's alpha. The outer standardised loadings determine the correlation between the indicator and the latent variable that it is supposed to measure, which should be higher than 0.7 (Henseler *et al*., 2009:299). However, Chin (1998:325) notes that outer loadings with 0.5 and 0.6 can also be considered if research development is in early stages. Henseler *et al.* (2009:299) also note that eliminating of indicators should only be conducted if composite reliability increases. This study considered a cut-off criterion of 0.5.

The loadings of the reflective first-order constructs showed that 10 items out of a total of 62 measurement items had to be removed, as they did not meet the cut-off criterion of 0.5. Although proactiveness showed low loadings for two out of three indicators, one indicator with low loadings was retained, since latent variables with only one indicator cannot determine measurement error (Fornell, 1983:445). Baumgartner and Homburg (1996:144) note that even latent variables with two indicators might be problematic. Annexure B shows the table with original indicator loadings.

Validity of reflective concepts and constructs was determined by convergent and discriminant validity. Convergent validity is determined with the average variance

extracted (AVE). This describes the amount of variance that is captured by the latent variable relative to the amount due to measurement error. An AVE value of at least 0.5 indicates that 50% of the variance of the indicators is accounted for by the latent variable (Chin, 1998:321; Fornell & Larcker, 1981:46; Henseler *et al*., 2009:299).

AVE was calculated for each measurement model after items with low loadings had been removed. Considering all first-order reflective concepts that were used for this study, human capital showed a low AVE value (0.4781). Further, the second-order reflective construct entrepreneurial capital also demonstrated a low AVE value (0.2666). The following table summarises the AVE values for all reflective concepts.

TABLE 5.1: AVE values for reflective concepts

Reflective concept/construct	AVE
Proactiveness (PRO)	0.5826
Responsiveness (RESP)	0.6100
Information generation (GEN)	0.5878
Information dissemination (DIS)	0.7087
Interdepartmental coordination (COO)	0.6569
Innovation intensity (INN)	0.7922
Financial capital (FIN)	0.7144
Human capital (HUM)	*0.4781*
Social capital (SOC)	0.5334
Entrepreneurial capital (CA)	*0.2666*
Risk-taking (RISK)	0.7301
Management support (MGT)	0.7488
Organisational structure (STRU)	0.8309
Alliance formation (ALL)	0.6284
Market sensing (SENS)	0.5540
Customer preferences (CUST)	0.5587
Relative competitive strength (COMP)	0.6349
Firm performance (PERF)	0.7687

Discriminant validity can be assessed by the Fornell-Larcker criterion on a construct level (Fornell & Larcker, 1981:41) and cross-loadings on an indicator level (Henseler

et al., 2009:299-300). The Fornell-Larcker criterion determines how much more variance a latent variable shares with its indicators than with other latent variables representing a different block of indicators (Chin, 1998:321; Henseler *et al.,* 2009:299; Ringle, 2004:21). As the only reflective construct on the second-order level is entrepreneurial capital (CA), a meaningful comparison with the other constructs, which are formative, cannot be made. Hence, the Fornell-Larcker criterion is not established for this study.

On the indicator level, cross-loadings were examined. For that purpose correlations between the indicators and their respective latent variable were conducted. An indicator should load higher on the respective latent variable than on other latent variables (Chin, 1998:321; Henseler *et al*., 2009:300; Ringle, 2004:21).
Cross-loadings were examined for the first-order reflective concepts, excluding items that were removed due to low outer loadings. No cross-loadings could be found, which indicates discriminant validity of the reflective concepts. The table is presented in Annexure 3.

Table 5.2 summarises the discussed reliability and validity measures for reflective concepts.

TABLE 5.2: Reliability and validity for reflective concepts

Reflective concepts	Description
Reliability measures	• Composite reliability > 0.70 satisfactory • Outer standardised loadings > 0.707; however in early stages of scale development 0.50 and 0.60 acceptable
Validity measures	• Convergent validity: AVE > 0.5 • Discriminant validity: Fornell-Larcker criterion, cross-loadings

Sources: Chin (1998:325); Henseler *et al*. (2009:299)

In formative constructs reliability cannot be assessed in the same way as with reflective constructs, as indicators can have a positive, negative or zero correlation between each other and the latent variable (Diamantopoulos & Winkelhofer,

2001:271; Diamantopoulos *et al*., 2008:1215). However, validity is an important aspect of formative measurement models and can be assessed on both a theoretical and a statistical level (Henseler *et al*., 2009:301).

The theoretical aspects of validity concern content specification and indicator specification (Diamantopoulos & Winkelhofer, 2001:271-272).

Content validity is considered to be satisfactory if it covers a range of meanings that the concept covers (Babbie, 2010:155; Cooper & Schindler, 2008:290). In formative constructs this aspect is very important, since the exclusion of relevant facets of the construct could lead to an incomplete specification of the latent variable (Diamantopoulos & Winkelhofer, 2001:217). Nunnally and Bernstein (1994:102) note that content validity requires a plan and procedure to test the material before it is administered.

For this study content validity can be considered good. The questionnaire was tested and discussed with four industry experts, who made sure that the questionnaire captured the necessary constructs and was sound in terms of instructions, content, wording and timing.

Indicator specification addresses the issue of capturing a wide variety of meanings of the construct (Diamantopoulos & Winkelhofer, 2001:271). Indicator specification was also discussed with the industry experts and was considered to be adequate.

On the statistical level, formative constructs need to be assessed regarding multicollinearity. Multicollinearity presents a serious problem to formative measurement, as it makes it difficult to determine each concept's influence on the overall construct (Diamantopoulos & Winkelhofer, 2001:272). Multicollinearity can be determined by the variance inflation factor (VIF). VIF values of higher than 10 indicate collinearity (Henseler *et al.,* 2009:302). In formative measurement more conservative values are applied, which signify multicollinearity even at values of 3.3 (Roberts & Bennett Thatcher, 2009:18). For this study multicollinearity was determined for the formative constructs of the model. Entrepreneurial behaviour (BE), strategic orientation (SO), corporate entrepreneurial management (CE) and market

driving (MD) were submitted to test multicollinearity. It was found that multicollinearity was not a problem in this study. Table 5.3 summarises the VIF values.

TABLE 5.3: VIF values for formative constructs

Formative construct	VIF
BE	1.837
SO	2.809
CE	1.766
MD	2.485

Note: Values were generated in SPSS V.9.0 (2004)

External validity can be assessed by correlating the formative construct with other related variables (Diamantopoulos & Siguaw, 2006:270; Foedermayr, Diamantopoulos & Sichtmann, 2009:61; Henseler *et al*., 2009:301). Diamantopoulos and Winkelhofer (2001:272) suggest relating the formative construct to an overall global item that summarises the main aspects that the construct measures. In order to assess external validity for the second-order formative constructs entrepreneurial behaviour (BE), strategic orientation (SO), corporate entrepreneurial management (CE) and market driving (MD), the questionnaire included two items per construct that summarised the essence of each construct. Correlation analysis between the formative constructs and these two indicators showed significant correlations, which allowed the establishment of external validity. The following table summarises the formative constructs, the indicators and the significance level.

TABLE 5.4: External validity of second-order constructs

Indicator	Formative second-order constructs			
	BE	SO	CE	MD
Q46	0.195*			
Q47	0.239*			
Q48		0.146*		
Q49		0.187*		
Q44			0.191*	
Q45			0.198*	
Q59				0.218*
Q60				0.228*

Note: Correlation values are generated in SPSS V.9.0 (2004); * indicates significance at 0.01 level.

Construct validity, including nomological validity, can be established for formative constructs (Diamantopoulos *et al.,* 2008:1216). Nomological validity can be established by examining the construct's relation to other related constructs in the model. The theoretical relationship of the respective constructs should be based on previous research (Diamantopoulos *et al*., 2008:1216; Foedermayr *et al*., 2009:63; Henseler *et al*., 2009:302).

In order to determine nomological validity and at the same time identify the formative construct, each construct was related to the outcomes parameters of the model: firm performance (PERF) and relative competitive strength (COMP). As mentioned in the previous chapters, each of the formative constructs has theoretically and/or empirically been related to one or both of these outcomes parameters. All formative constructs: entrepreneurial behaviour (BE), strategic orientation (SO), corporate entrepreneurial management (CE) and market driving (MD) were shown to be significantly related to the two outcomes parameters, firm performance (PERF) and relative competitive advantage (COMP), which demonstrates nomological validity.

Table 5.5 summarises the path coefficients between the constructs and the outcomes parameters, the t-values and the respective significance levels.

TABLE 5.5: Establishing nomological validity for formative constructs

Constructs	Path coefficient	t-value
BE → PERF	0.2635*	4.1422
BE → COMP	0.2805*	5.4004
SO → PERF	0.2231*	4.0732
SO → COMP	0.3258*	6.3229
CE → PERF	0.2329*	4.3879
CE → COMP	0.2512*	4.7712
MD → PERF	0.2928*	5.3490
MD → COMP	0.3142*	5.9127

Note: t-values are generated via bootstrapping in SmartPLS (Ringle *et al*., 2005); t-values > 2.576 are significant at 0.01 level (*) for a two-tailed test (n=328)

Table 5.6 summarises the discussed validity measures for formative constructs.

TABLE 5.6: Validity of formative constructs

Formative constructs	Description
Validity measures	• Content validity & indicator specification • Multicollinearity: VIF values < 3.3 • External validity • Construct validity: nomological validity

Sources: Diamantopoulos *et al*. (2008); Foedermayr *et al*. (2009); Henseler *et al*. (2009)

5.5.4 Data analysis with structural equation modelling

The purpose of the following paragraphs is threefold. First, the discussion outlines the two approaches to structural equation modelling based on their technical aspects. Second, on the basis of a limited selection of articles in the field, it covers the application of each approach in research. Third, it presents reasons for the use of the partial least squares approach in this study.

The aim of structural equation modelling is to explain the structure among latent variables which are measured with observed variables (Diamantopoulos, 1994:105).

The advantage of structural equation modelling over first-generation techniques such as principal component analysis, discriminant analysis or multiple regressions is the greater flexibility between data and theory. Relationships can be modelled between multiple independent and multiple dependent variables; latent variables can be used; measurement errors can be considered; and theoretical assumptions can be tested against empirical data (Chin, 1998:297; Chin & Newsted, 1999:308). Kaplan (2009:13) notes that the relationships between variables are referred to as path analysis as well as simultaneous equation modelling. Hence, the terms path modelling and equation modelling are used interchangeably.

In general there are two approaches to structural equation modelling (SEM).

First, a covariance-based approach (CBSEM) can be taken, which is analysed with various tools. The most popular tool is Lisrel (Linear Structural Relations) which has been developed by Jöreskog (1973 in Sörbom & Jöreskog, 1982:382). Lisrel has been widely used in previous research studies and hence has become synonymous with SEM (Chin, 1998:295; Dijkstra, 1983:67; Haenlein & Kaplan, 2004:285).

Second, a partial least squares approach (PLS) which was developed by Wold (1978 in Jöreskog & Wold, 1982:265) can be used. The PLS approach is related to principal components and canonical correlations analysis, and allows for estimation of latent variables in two or more dimensions (Jöreskog & Wold, 1982:265).

The distinguishing characteristics of the two approaches from an applied research perspective are related to the purpose of the study and the level of theory development.

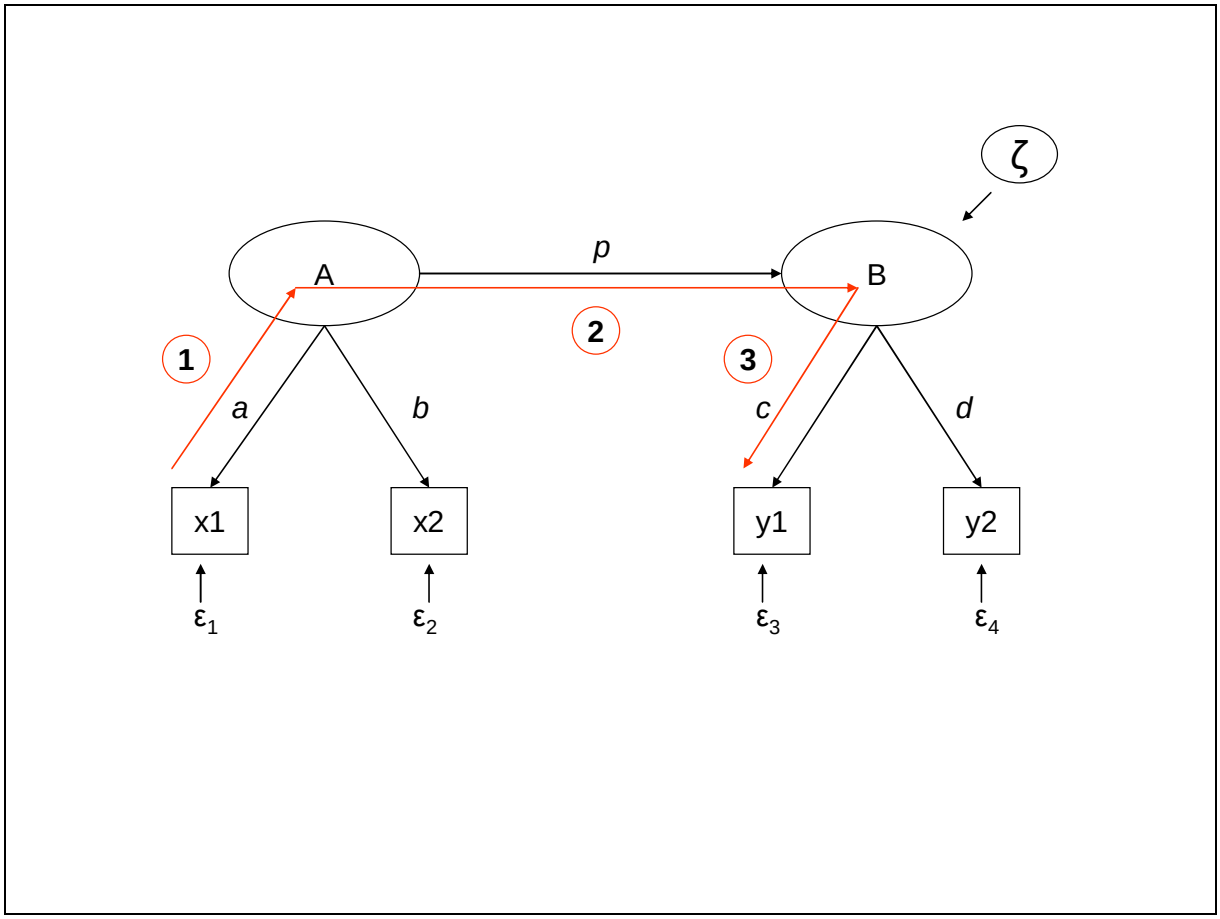
It is held that CBSEM is more theory oriented and emphasises theory confirmation. The focus is on fitting the model to the data. If fit cannot be achieved with the specified model, a modification of the model can easily be achieved (Diamantopoulos, 1994:106; Jöreskog & Wold, 1982:270; Rigdon, 1998:260).

PLS is often used in more complex situations and in situations where theory is not well developed. Hence, the data have a stronger impact than in CBSEM analysis (Chin, 1998:296; Jöreskog & Wold, 1982:270).

The basic principles of Structural Equation Modelling (SEM) have been outlined in chapter four. The basic components in CBSEM and PLS are a measurement model and a structural model. The measurement model (exogenous model in PLS) describes how each latent variable is operationalised via its observed variables and considers measurement error. The structural model (endogenous model in PLS) was presented as a path diagram to demonstrate the relationships between the latent variables and their measurement error or disturbance terms (Diamantopoulos, 1994:106,109; Haenlein & Kaplan, 2004:286-288).

For explanation purposes of both approaches Figure 5.1 will be used, which shows a two-block model. Two latent variables, A and B, are each captured by a block of reflective indicators. The relationships between the latent variables and their respective indicators represent the measurement model. The structural model is represented by the hypothesised relationship, p, between the latent variables A and B (Chin, 1998:298).

FIGURE 5.1: Two block model used for CBSEM explanation



Source: adapted from Chin (1998:298)

5.5.4.1 Covariance-based structural equation modelling (CBSEM)

Model specification and estimation

The latent variable B (Figure 5.1) can also be described as an endogenous variable, as it is influenced by A. Latent variable A is considered to be an exogenous variable, as it is not influenced by any other variable in the model. Since endogenous variables cannot totally be accounted for by their exogenous variables, a disturbance term needs to be considered (MacCallum, 1995:19). Measurement error of the observed variables is measured by eta (ε) and the disturbance term of the dependent variable B is measured by zeta (ζ) (Chin, 1998:298). Error terms of the endogenous latent variable account for the fact that other variables (systematic errors or random errors) influence the latent variable besides the specified variables in the model (MacCallum, 1995:19).

After the model has been conceptually defined and the path diagram has been set up, the model needs to be specified. The relationships in the path diagram are translated into linear equations for the structural and the measurement part as well as for error terms of the model. The equations are then transferred into parameter matrices which imply a certain covariance matrix (Diamantopoulos, 1994:110-112).

In a next step the covariance matrix from the empirical data set is calculated (Chin, 1998:299). Before parameters are estimated, the model needs to be identified. Identification means that a unique set of parameter estimates can be generated. This can be considered to be the case if the number of equations is at least equal to the number of unknowns. If this is the case the model can be considered as just-identified (Diamantopoulos, 1994:114-115; Rigdon, 1995:359; Rigdon, 1998:257).

Parameters are estimated using a fitting function which specifies how closely the hypothesised covariance matrix matches the empirical covariance matrix. The fitting function most often used is the maximum-likelihood function (ML), which provides consistently robust estimates of parameters. In addition, it provides several fit functions to assess how well the theoretical model fits the data (Diamantopoulos, 1994:116). The parameters a, b, c, d are estimated based on a reproduction of the data covariance matrix (indicated by the red lines and numbers in Figure 5.1) onto the hypothesised matrix. In order to solve these equations the variance of A and the loading of c need to be set to 1. In the first block x1 and x2 covary through A, which can be represented by a*b. In a further step the relationships between x1 and y1 can be estimated, which requires the estimation of p. Parameter c is set to one which allows for a*p. The process is continued until all parameters are estimated and best reproduce the sample covariance matrix (Chin, 1998:300).

Evaluating model fit

A final step in CBSEM is to assess model fit. The measurement model is assessed with regard to observed variables and the extent to which they are free from measurement error. Squared multiple correlations are calculated for the observed variables. Coefficients are between zero and one. The closer the coefficient is to one, the better the observed variable captures the latent variable. The coefficient of

determination (R^2) indicates how well the group of observed variables capture the respective latent variables. The closer R^2 is to one, the better the latent variable is explained by its indicators (Diamantopoulos, 1994:121).

The structural model considers indices that capture the structural relationships between the latent variables as well as indices to assess the model as a whole. The structural relationships are assessed with the total coefficient of determination, which shows the strength of the relationship for all structural relationships together (Diamantopoulos, 1994:121).

The overall model is evaluated by the chi-square statistic (χ^2), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), root mean squared residual (RMSR) and the comparative fit index (CFI) (Diamantopoulos, 1994:121; Rigdon, 1998:268; Sörbom & Jöreskog, 1982:386-387).

The chi-square statistic (χ^2) implies whether the hypothesised covariance matrix adequately reproduces the sample covariance matrix. A high value indicates poor reproduction, whereas low values indicate good reproduction. As the chi-square statistic is sensitive to various influences such as non-normality and sample size, it should be interpreted with caution (Diamantopoulos, 1994:121-122; Hu & Bentler, 1995:87; Rigdon, 1998:268; Schumacker & Lomax, 2010:85; Sörbom & Jöreskog, 1982:386).

The root mean square error of approximation (RMSEA) minimises the effects of sample size in chi-square statistics. Values between 0 and 0.05 are considered as good overall fit (Rigdon, 1998:270).

Similar to the chi-square statistic, the goodness-of-fit index (GFI) determines how closely the hypothesised model reproduces the observed covariance matrix. The adjusted goodness-of-fit (AGFI) considers the degrees of freedom in the model (Diamantopoulos, 1994:122; Schumacker & Lomax, 2010:87). As the GFI is independent of sample size it is a relatively robust measure. Values for GFI should be between zero and one (Sörbom & Jöreskog, 1982:387).

The root mean squared residual (RMSR) reflects the amount of variance and covariance not reflected in the model. The closer the value is to zero, the better the fit (Diamantopoulos, 1994:122). The comparative fit index (CFI) describes the overall model fit compared with a worst-case alternative. The CFI ranges between values of zero and one. The closer the CFI is to one, the better the model explains the covariance among the measures (Rigdon, 1998:270).

5.5.4.2 Partial least-squares path modelling (PLS-PM)

Partial least squares (PLS) aims to maximise the variance of the dependent variables explained by the independent variables (Chin & Newsted, 1999:313; Haenlein & Kaplan, 2004:290). In order to obtain parameter estimates, PLS consists of three components. First, the measurement part relates the observed variables to their respective indicators. Second, the structural part represents the relationships between the latent variables. The third part relates to weight relations, which are used to estimate case values for the latent variables (Cassel, Hackl & Westlund, 1999:437; Chin & Newsted, 1999:315; Haenlein & Kaplan, 2004:290).

Model specification and estimation

For a detailed explanation of the PLS procedure, Figure 5.2 is used to describe the steps involved in model estimation. In a first step, the measurement model, which relates the observed variables to their latent variables, is estimated. For this purpose case values for each latent variable, A and B are estimated as a weighted sum of its indicators (x1, x2 and y1, y2). In order to obtain the weights it is necessary to first determine the measurement model of each latent variable (indicated by the red lines and numbers in Figure 5.2). In cases where the measurement model is reflective, simple regression models are calculated, where loadings of the observed variables determine the impact on the latent variable. In formative measurement models, coefficients link the observed variables to the latent variable. The latent variable scores for A and B are then calculated as a weighted average of their observed variables using weight relations as an input (indicated by number 2 in Figure 5.2) (Chin, 1998:301-302; Esposito Vinzi, Trinchera & Amato, 2010:50-52; Haenlein & Kaplan, 2004:291; Wold, 1982:2-3).

To determine the weight relations, an iterative procedure between inside and outside approximation is conducted until convergence of the case values is achieved (Lohmöller, 1989:41). First, an outside approximation determines case values for each latent variable. The latent variables, A and B, are estimated based on a weighted average of their observed variables. The weights are calculated in the form of principal components for reflective measurement models and with regression analysis for formative models (Haenlein & Kaplan, 2004:291). Second, an inside approximation is conducted which calculates case values for the latent variable based on its association with other latent variables. For the inner approximation, weights can be estimated using a path weighting scheme, a centroid weighting scheme or a factor weighting scheme. Most research applies the path weighting scheme, which considers regression coefficients (Esposito Vinzi *et al.,* 2010:53; Haenlein & Kaplan, 2004:291; Lohmöller, 1989:42). However, whatever scheme is chosen, the variation of the final results is considered to be minor (Haenlein & Kaplan, 2004:291). This study applied the path weighting scheme.

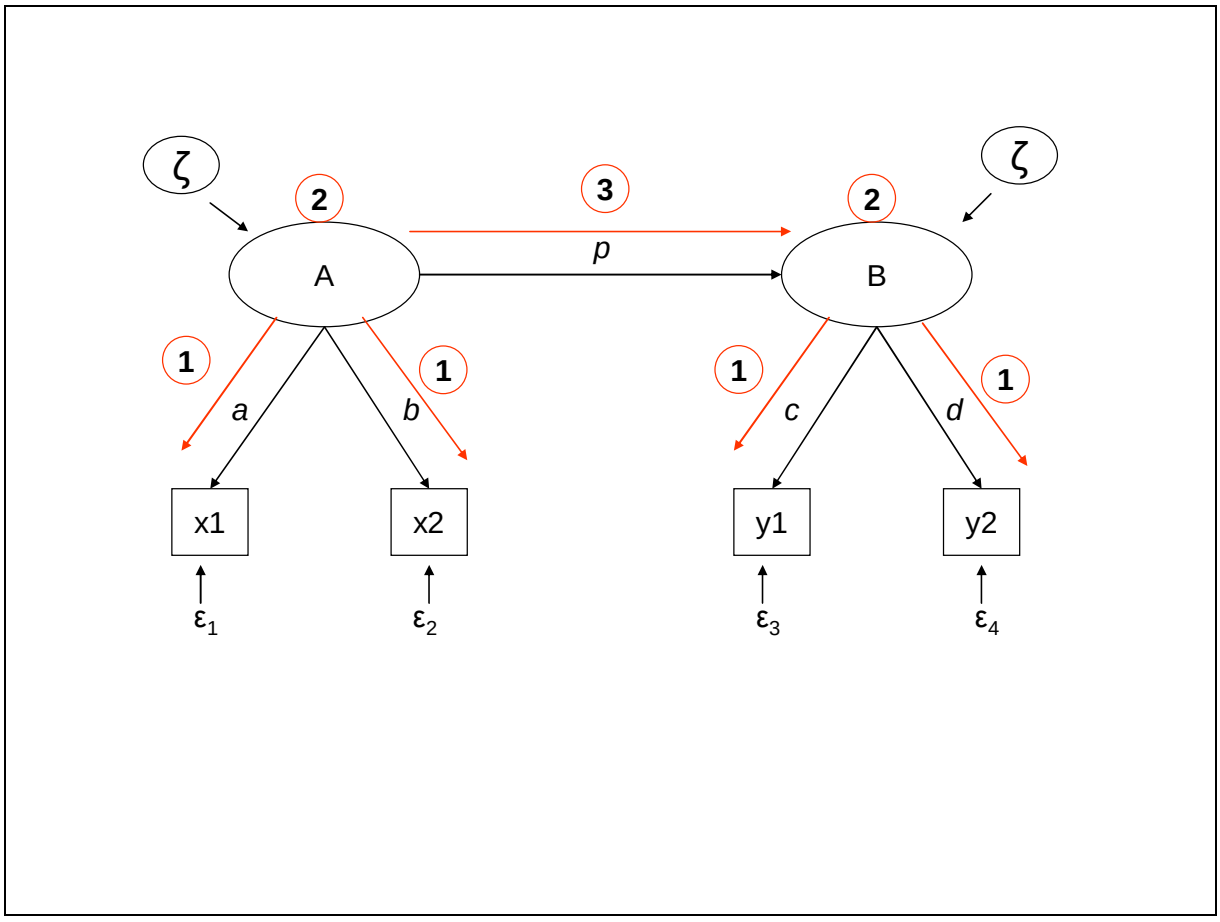
PLS uses information from the inside and outside approach to estimate a score value for each latent variable. Once a first estimate of latent variables has been generated, the outer weights are updated and the algorithm further alternates between inner and outer estimation until convergence (Chin, 1998:303; Esposito Vinzi *et al*., 2010:53,55; Fornell & Cha, 1994:64; Haenlein & Kaplan, 2004:291).

The structural part of the PLS model, which is also referred to as predictor specification, is estimated through ordinary least squares regressions among latent variables (indicated by number 3 in Figure 5.2) (Chin & Newsted, 1999:324; Esposito Vinzi *et al*., 2010:55). Relationships are used for prediction, and not necessarily for structural explanation as in CBSEM (Chin & Newsted, 1999:325-326).

Latent variables have error terms which account for the variance which is not covered by the independent variables. The unit variance of each latent variable equals one. Since exogenous latent variables do not have any predictor variables, their error term equals one (Falk & Miller, 1992:25).

PLS underestimates the paths in the structural model and overestimates the loadings (Chin & Newsted, 1999:329; Djikstra, 1983:81; Haenlein & Kaplan, 2004:292; Tenenhaus, Esposito Vinzi, Chatelin & Lauro, 2005:184). The reason for this can be found in the estimation procedure of the model. In PLS the overall model is divided into parts. One part is estimated while the other part is held constant. However, overall this effect is equalised on the indicator level and estimation becomes more accurate with the number of indicators per construct and sample size (Nitzl, 2010:16).

FIGURE 5.2: Two-block model used for PLS explanation



Source: adapted from Chin (1998:298)

Evaluating model fit

PLS path modelling does not have an overall fitting function to assess goodness of fit of the model. PLS fit is determined in order to assess the predictive power of the model. Therefore each part of the model needs to be assessed: the measurement

model, the structural model and the overall model (Esposito Vinzi *et al*., 2010:56; Fornell & Cha, 1994:68).

The assessment of reliability and validity of the measurement model has been outlined in section 5.5.3.3. The main criteria for assessing the measurement model for reflective indicators are AVE, composite reliability and cross-loadings. For formative variables indicators must be specified, and multicollinearity, external validity and nomological validity assessed.

The two primary evaluation criteria for the structural model are the coefficient of determination (R^2) and the level and significance of path coefficients (Hair, Ringle & Sarstedt, 2011:147).

R^2 is estimated for the endogenous constructs and gives the explanatory power of the model (Esposito Vinzi *et al.,* 2010:57; Fornell & Cha, 1994:69; Hair *et al*., 2011:147). In general R^2 values should be high. Chin (1998:323) considers R^2 values of 0.67 as substantial, 0.33 as moderate and 0.19 as weak. Hair *et al.* (2011:147) argue that the level of R^2 must be interpreted within the research discipline. Whereas R^2 values of 0.20 in consumer behaviour are considered to be high, marketing studies consider R^2 values of 0.75 to be high.

The R^2 value for the endogenous construct market-driving ability in the direct effects model was determined at 0.612. According to the values used by Chin (1998:323), this indicates almost substantial explanatory power.

The path coefficients can be interpreted as standardised beta coefficients. Path coefficients can be assessed on their sign and their significance, which leads to an acceptance or rejection of the a priori formulated hypothesis. In PLS the significance levels are estimated via bootstrapping (Hair *et al*., 2011:147; Henseler *et al*., 2009:303).

As PLS does not assume normally distributed data, the bootstrapping procedure is used to determine significance of various parameters. The bootstrapping technique takes the observed sample as if it represented the population and creates a new data

set by repeated random sampling with replacement from the original sample. Bootstrapping produces standard errors which can be used for hypothesis testing (Chin, 2010:83; Hair *et al*., 2011:148; Henseler *et al*., 2009:303). For this study bootstrap samples of 500 were used.

Another assessment criterion for the structural model is the effect size (f^2) of the path model. Effect size determines the impact of the exogenous latent variable on the endogenous latent variable. To determine f^2, R^2 value of the overall model considering all exogenous latent variables is taken (R^2 included). Further, R^2 is estimated for a reduced model by excluding the exogenous latent variable whose influence is to be estimated (R^2 excluded). The following formula is applied to calculate f^2 (Henseler *et al.*, 2009:303).

$$f^2 = \frac{R^2_{(included)} - R^2_{(excluded)}}{1 - R^2_{(included)}}$$

In order to show the predictive quality of the overall model, the Stone-Geisser test (Q^2) can be applied using the blindfolding procedure in PLS (Henseler *et al*., 2009:304-305). Q^2 measures how well the observed values are reconstructed by the model and its parameter estimates. Q^2 values higher than zero imply that the model has predictive relevance. Values smaller than zero represent the opposite (Chin, 1998:317-318; Esposito Vinzi *et al*., 2010:60; Fornell & Cha, 1994:72; Tenenhaus *et al*., 2005:174; Wold, 1982:30). Q^2 and the blindfolding procedure can only be applied to endogenous latent variables with a reflective measurement model (Henseler *et al*., 2009:305). The endogenous latent variables in this study are market-driving ability (MD-ability), firm performance (PERF) and relative competitive strength (COMP). Market-driving ability consists of a formative measurement model, hence Q^2 cannot be established. Firm performance and relative competitive strength are represented by a reflective measurement model that allows for the estimation of Q^2.

Table 5.7 summarises the various model evaluation methods.

TABLE 5.7: PLS model evaluation criteria

Model evaluation	Description
R^2	Substantial: 0.67; moderate: 0.33; weak: 0.19
Path coefficients	Evaluation in terms of sign, magnitude and significance
Effect size (f^2)	small: 0.02; medium: 0.15; large: 0.35
Q^2	Predictive quality of the model – only for endogenous latent variables with reflective measurement model

Source: Henseler *et al.* (2009:303)

To conclude the overview of the two SEM approaches, the following table provides a summary.

TABLE 5.8: Summary PLS versus CBSEM

	PLS	CBSEM
Approach to theory and data analysis	• Theory development, predictive focus • Limited information approach – limited inference about population	• Theory confirmation, causality focus • Information approach – inference about population
Estimation of measurement / structural model	• Measurement model overestimated • Structural paths underestimated	• Measurement model underestimated • Structural paths overestimated
Estimation of parameters	• Linear multiple regressions	• Replication of covariance matrix
Model evaluation	• Measurement model fit indices: communality index, average variance extracted (AVE) • Structural model: coefficient of determination (R^2), path coefficients, effect size (f^2) • Determining predictive power of the model: blindfolding (Stone-Geisser test Q^2)	• Measurement model fit: Squared multiple correlations of observed variables, coefficient of determination (R^2) • Structural model: total coefficient of determination • Overall model fit: chi-square statistic (χ^2), root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), root mean squared residual (RMSR) and the comparative fit index (CFI)

Sources: Chin (1998); Diamantopoulos (1994); Esposito Vinzi *et al*. (2010); Henseler *et al*. (2009); Rigdon (1998)

5.5.4.3 CBSEM and PLS assumptions and conditions

The following paragraphs outline the controversial research discussion between the two SEM approaches. The specific focus is on the most often discussed issues of sample size and model identification.

Comparisons between PLS and CBSEM are most often based on the maximum-likelihood (ML) estimation procedure of CBSEM. It is noted that several other algorithms, such as generalised least squares (GLS), asymptotically distribution free (ADF), weighted least squares (WLS) or unweighted least squares (ULS) are available. ML and GLS are considered to be rather robust methods when assumptions such as normal distribution of the sample data are not given (Diamantopoulos, 1994:116; Rigdon, 1998:265). Nunnally and Bernstein (1994:480) suggest that for highly non-normal data ULS is more suitable than ML and GLS.

PLS research often claims to be able to accommodate different measurement levels of data as well as formative indicators in measurement (Falk & Miller, 1992:9; Fornell & Bookstein, 1982:440; Haenlein & Kaplan, 2004:291; Schneeweiss, 1991:145). Although these two conditions are easily modelled in PLS, nowadays CBSEM can also handle various data levels as well as formative indicators (Henseler *et al*., 2009:288,290; Jöreskog, 2005:1; Temme & Hildebrandt, 2006:2-3; Thomas, Lu & Cedzynski, 2007:8).

In PLS the appropriate sample size is often estimated by the following rule of thumb. The sample size needs to be equal to or larger than the following:
“1.) Ten times the scale with the largest number of formative indicators … or
2.) Ten times the largest number of structural paths directed at a particular construct in the structural model.” (Chin, 1998:311; Chin & Newsted, 1999:327; Chin, Marcolin & Newsted, 1996:39).

Falk and Miller (1992:13-14) suggest an even simpler rule, a case-to-variable ratio limit which requires that there are more cases than variables in a block and that there must be more cases than formative latent variables.

The reasoning behind these rules derives from a data reduction perspective. It is argued that in practical research situations, the researcher is confronted with a limited number of willing participants as well as time and cost constraints (Falk & Miller, 1992:14). Further, as PLS performs a partial estimation procedure which estimates regressions for one block at a time, only the part with the largest multiple regressions needs to be identified (Chin & Newsted, 1999:326; Fornell & Cha, 1994:75).

However, in order to account for the adequate power of the model, it is also necessary to consider various conditions of the respective sample. Low sample sizes (e.g. n = 20) do not allow identification of low-valued structural path coefficients (Marcoulides & Saunders, 2006:iv; Marcoulides, Chin & Saunders, 2009:174). Small sample sizes also mean large parameter standard errors, which negatively influence the accuracy of estimation (Thomas *et al*., 2007:8).

Marcoulides and Saunders (2006:iv) state that the appropriate sample size depends on many factors such as:

- The psychometric properties of the variables
- The strength of the relationship among variables
- The complexity and size of the model
- The amount of missing data
- The distributional characteristics of the variables

The views on sample size in PLS are divergent. In Wold's (1982:4) original work, the issue of 'consistency in the large-sample case' is mentioned. As latent variables are measured as aggregates of their observed variables they include in part measurement error. This results in an overestimation of the measurement model and an underestimation of the structural model in the PLS model. PLS parameters will converge to true population values when the sample size and the number of indicators increase indefinitely. Hence, better estimates can be achieved by increasing sample size and the number of indicators (Chin & Newsted, 1999:329; Djikstra, 1983:81; Haenlein & Kaplan, 2004:292; Tenenhaus *et al*., 2005:184).

Another assumption that needs to be met is the identification of parameters. Identification refers to the necessary condition that unique solutions for parameters can be calculated based on the available empirical data. Identification can be achieved if the number of equations is at least equal to the number of unknowns (Bollen, 1989:88; Diamantopoulos, 1994:114-115; Rigdon, 1998:258). Whereas this condition is not as easily accomplished with CBSEM models, as its main focus is on reproducing the covariance matrix based on a restricted number of parameters, it is considered to be fulfilled in PLS models if they are recursive (Fornell & Cha, 1994:74; Temme & Hildebrandt, 2006:2).

Although researchers often emphasise that PLS and CBSEM are complementary approaches (Jöreskog & Wold, 1982:270), a certain rivalry between the two can be noted. The purpose of the presented analysis was to clearly identify main differences between the two approaches that need to be considered in conjunction with the specific research purpose.

5.5.4.4 Application of PLS for the purpose of this study

As outlined above, both approaches to structural equation modelling have their advantages and disadvantages when it comes to measuring the variables and constructs in the model. In order to identify the approach best suited to fulfilling the purpose of this study the broader research question needs to be considered.

As has been stated in chapter three, the literature on market driving is mainly based on qualitative studies which include constructs and concepts that have primarily been taken from the marketing and entrepreneurship field to explain market-driving. The construct of market driving has not previously been measured. Furthermore, factors influencing market-driving ability are considered to be numerous; but have also not been measured so far. Therefore one of the main research targets of this study is to measure market driving and identify organisational factors that influence market-driving ability in order to assist organisations to become more market driving. This perspective moves the exploratory and predictive aspect to the fore. Moreover, as theory around market driving is not well established, empirical data should receive more weight in the analysis than the theory.

As outlined in the previous discussion, PLS is more data-driven than CBSEM (Chin *et al*., 1996:39; Chin, 1998:295-296,304).

Although both structural equation models can account for formative indicators, the widely held opinion is that PLS is in a better position to account for formative measurement models than CBSEM (Chin, 1998:299; Hair *et al*., 2011:143; Wetzels, Odekerken-Schröder & van Oppen, 2009:180). As outlined in chapter four, the model that is tested in this study consists of mainly formative constructs.

In order to accommodate the primary disadvantage of PLS models which has been described as the 'consistency at large' (Chin, 1998:329; Wold, 1982:4) the sample size for this research was determined at n = 6015. After accounting for unsuitable and unavailable respondents, n = 962 interview appointments could be made. The response rate was 34.1%, resulting in n = 328 usable interviews for data analysis. The ratio of observations to parameters is five. Albers (2010:419) estimated a reliable PLS model with fewer than four observations per parameter. Therefore it is assumed that a reliable model can be estimated with the achieved sample size.

For the purpose of this study SmartPLS (Ringle *et al.,* 2005) and SPSS V 9.0 (SPSS Inc., 2004) were used to conduct the required analysis.

5.6 CONCLUSION

This chapter outlined the research methodology that was used in this study. First, the research problem and objectives were outlined. Then the propositions that were presented in chapter four were formulated as hypotheses, as they were now to be used for empirical testing. A total of 29 hypotheses were formulated, which would be tested using partial least squares path modelling.

A formal study using a non-probability sample from the South African healthcare industry was conducted. The study used a communication approach in the form of a telephonic survey. A total of 328 interviews were realised. The survey used a five-point Likert response format and Likert type scales. Reliability and validity of the measurement instrument were assessed.

Different options of data analysis were discussed and the preferred approach of partial least squares path modelling for the purpose of this study was discussed.

The next chapter presents the most significant results and tests the specified hypotheses.

CHAPTER 6:
DATA ANALYSIS AND FINDINGS

6.1 INTRODUCTION

The previous chapters have outlined the measures of market driving and described the factors influencing market-driving ability. It was argued that the model for market-driving ability can be best estimated with partial least squares path modelling. The estimation procedures of PLS-PM were described in chapter five.

The focus of this chapter is to perform the analysis and interpret the findings. First, this chapter will outline the descriptive statistics for this study, considering biographical information of respondents. Second, the measurement models for all latent variables will be estimated and the formative constructs identified. Third, the structural model of market-driving ability will be estimated using the model fit indicators outlined in chapter five.

Finally, the moderating variables management level and industry focus will be analysed in separate models.

6.2 DESCRIPTIVE ANALYSIS

The descriptive analysis provides a very useful first step in data analysis. The specific purpose of descriptive analysis is to (Diamantopoulos & Schlegelmilch, 2000:73):

- Provide insights into the distribution of values for each variable.
- Help detect errors in the coding process.
- Present data in an appealing way by using tables and graphs.

Frequency distributions show how often the different values are present in the sample (Babbie, 2010:428; Diamantopoulos & Schlegelmilch, 2000:74).

A descriptive analysis is provided for the biographical information captured in the questionnaire which relates to gender, age, industry focus of the organisation, department the respondent currently worked in, number of years of experience in the healthcare industry and number of years the respondent had worked in the current position.

The first screening question related to the industry focus of the organisation. The majority of respondents, 69.5%, worked for a pharmaceutical manufacturer, 19.2% were in the medical device business and 9.2% worked for pharmaceutical wholesalers or distributors. Open medical schemes were hardly represented in the sample, which is not surprising as the number of open medical schemes is low and also constantly decreasing. Currently 33 open medical schemes operate in South Africa (Council of Medical Schemes, 2010:157). The results are summarised in Table 6.1.

TABLE: 6.1: Industry focus of organisation

Industry focus	Frequency (n)	Percentage (%)
Pharmaceutical manufacturer	228	69.5
Medical device manufacturer	63	19.2
Pharmaceutical distributor/wholesaler	30	9.2
Open medical scheme	7	2.1
Total	**328**	**100**

The second screening question dealt with the management level of respondents. As indicated in Table 6.2, 20.1% of respondents were on a top management level which included positions like Chief Executive Officer, Chief Financial Officer, Chief Operating Officer or Head of Business Unit. The majority of respondents, 53.1%, were in a middle management position, which included positions such as Senior Director or Group Leader. Junior management positions included positions such as Brand/Financial/Communications Manager, which accounted for 26.8% of all respondents.

TABLE 6.2: Management level

Management level	Frequency (n)	Percentage (%)
Top management	66	20.1
Middle management	174	53.1
Junior management	88	26.8
Total	**328**	**100**

As far as gender was concerned, the sample was almost equally distributed between male and female respondents. As presented in Table 6.3, 55.5% of respondents were male and 44.5% were female.

TABLE 6.3: Gender of respondents

Gender	Frequency (n)	Percentage (%)
Male	182	55.5
Female	146	44.5
Total	**328**	**100**

Table 6.4 presents the age range of respondents. The majority of respondents (71%) were between 31 and 50 years old. When considering the high number of respondents in middle management positions, the question could be asked whether management level was associated with age. To test the null hypothesis that the management level was independent of age, a one-sample chi-square was used (Cooper & Schindler, 2008:484; Morgan, Leech, Gloeckner & Barrett, 2007:107). When considering the management level and age of respondents it was found that the management level was dependent on age ($\chi^2 = 31.84$, $df = 8$, n = 327, p = 0.01).

TABLE 6.4: Age range of respondents

Age range	Frequency (n)	Percentage (%)
21 – 30 years	38	11.6
31 – 40 years	124	37.8
41 – 50 years	109	33.2
51 – 60+ years	52	15.9
No answer	5	1.5
Total	**328**	**100**

As indicated in Table 6.5, the majority of respondents, 43.9%, worked in marketing and sales; 22.6% of respondents worked in other departments not listed in the questionnaire. These departments included mainly regulatory affairs and logistics. Chief Executive Officers who participated in the survey worked across all departments and hence did not assign themselves to a specific department.

TABLE 6.5: Current department

Current department	Frequency (n)	Percentage (%)
Finance	33	10.1
Human Resources (HR)	15	4.6
Information Technology (IT)	7	2.1
Legal	5	1.5
Marketing & Sales	144	43.9
Medical Research & Development (R&D)	21	6.4
Other	74	22.6
Production	29	8.8
Total	**328**	**100**

60% of respondents had had more than nine years' experience in the healthcare environment. The question could be asked whether the management level and the years of experience in the healthcare environment were related. In order to test the null hypothesis that the management level was independent of years of experience in the healthcare industry, a one-sample chi-square was used (Cooper & Schindler, 2008:484; Morgan *et al*., 2007:107). It was found that the management level was dependent on the number of years of experience ($\chi^2 = 27.37$, $df = 8$, $n = 327$, $p < 0.01$). Therefore it can be concluded that the more experienced employees are, the higher the management level they can achieve.

TABLE 6.6: Years of experience in healthcare environment

Years of experience in healthcare environment	Frequency (n)	Percentage (%)
less than 1 year	6	1.8
1 – 3 years	37	11.3
4 – 6 years	53	16.1
7 – 9 years	35	10.7
More than 9 years	196	59.8
No answer	1	0.3
Total	**328**	**100**

When considering the number of years respondents had been working in their current job (Table 6.7) it can be noted that on the one hand almost 50% of respondents had been in their current job for no longer than 3 years; on the other hand, almost 60% of respondents had had experience of more than 9 years in the healthcare environment (Table 6.6). To test whether there was an association between the number of years in the present job and the number of years of experience, a correlation was computed. The Spearman rho statistic was calculated, r_s (319) = 0.404, $p < 0.01$. The direction of the correlation was positive; indicating respondents with higher experience level had also been in their present job for longer. Although the test statistics indicated a positive relation, it should be noted that, based on the cross-tabulation, almost one-third of respondents with experience of more than 9 years had been in their present job for less than three years. This also indicates that experienced people remain flexible to take on new positions either within their organisation or outside.

TABLE 6.7: Number of years working in current job

Number of years in current job	Frequency (n)	Percentage (%)
less than 1 year	46	14.0
1 – 3 years	113	34.5
4 – 6 years	78	23.8
7 – 9 years	21	6.4
More than 9 years	62	18.9
No answer	8	2.4
Total	**328**	**100**

Overall, the average respondent can be characterised as male, between 31 and 50 years, working for a pharmaceutical manufacturer in a middle management position, having more than 9 years of experience and working in his present job for up to 6 years.

To test whether the variables followed a normal distribution, a Kolmogorov-Smirnov test was conducted using SPSS V 9.0 (2004). The null hypothesis, which states that the data are normally distributed, has to be rejected. The test showed that all measurement variables in the questionnaire are not normally distributed ($p < 0.001$). Since the partial least squares approach does not make any assumptions regarding the distribution of measurement variables (Chin & Newsted, 1999:336), this has no further implications for the subsequent analysis.

6.3 MEASUREMENT MODELS

As outlined in chapter five, PLS path models consist of a measurement model and a structural model. The assessment of the model follows a two-step process which uses a separate analysis of the measurement model and the structural model (Hair *et al*., 2011:144; Hulland, 1999:198). The following paragraphs outline the measurement models of all specified constructs. In order to identify the formative constructs of market driving, corporate entrepreneurial management, strategic orientation and entrepreneurial behaviour, two related outcomes parameters were used, as suggested by various researchers (Diamantopoulos *et al*., 2008:1216;

Foedermayr *et al*., 2009:63; Henseler *et al*., 2009:302). The two outcomes parameters for this study are firm performance and relative competitive strength.

SmartPLS (Ringle *et al*., 2005) was used to analyse the models. The following standard settings of the programme were applied: mean=0 and variance=1. The missing value algorithm was set to mean replacement.

In order to account for variance in the measurement model and the structural model the following procedures were applied. In the measurement model disturbance terms of second-order formative constructs were set to zero, since PLS assumes that the latent variable is a linear function of its predictor and that there are no linear relationships between the predictors and the residual (Chin & Newsted, 1999:322; Diamantopoulos *et al*., 2008:1215). Measurement error is accounted for in reflective first-order indicators. Squared loadings give an indication of how much variance of the observed variable is related to the component. Hence calculating one minus the squared loading gives the amount of variance due to measurement error (Falk & Miller, 1992:64; Götz, Liehr-Gobbers & Krafft, 2010:694). In the structural model the variance unaccounted for by the exogenous latent variable is measured by calculating one minus R^2 (Falk & Miller, 1992:72).

To test for significance, the bootstrapping technique was applied with resamples of n = 500. Two-tailed tests were performed for the loadings of the reflective constructs and path coefficients in the measurement model. One-tailed tests were performed for the path coefficients in the structural model, since a positive influence had been hypothesised.

Table 6.8 summarises the abbreviations of the concepts and constructs used in the analysis in an alphabetical order.

TABLE 6.8: Abbreviations for PLS analysis

Abbreviation	Description
ALL	Alliance formation
BE	Entrepreneurial behaviour
CA	Entrepreneurial capital
CE	Corporate entrepreneurial management
COMP	Relative competitive strength
COO	Interdepartmental coordination
CUST	Customer preferences
DIS	Information dissemination
FIN	Financial capital
GEN	Information generation
HUM	Human capital
MD	Market driving
MD-ability	Market-driving ability
MGT	Management support
PERF	Firm performance
PRO	Proactiveness
RESP	Responsiveness to information
RISK	Risk-taking
SENS	Market sensing
SO	Strategic orientation
SOC	Social capital
STRU	Organisational structure

6.3.1 Measurement model for market driving

Market driving (MD) was measured as a second-order formative, first-order reflective construct. The concepts include alliance formation (ALL), market sensing (SENS) and influencing customer preferences (CUST).

Alliance formation was originally designed to consist of five measurement questions. However, as indicated in chapter five, due to low loadings of question 54

(outer loading = 0.0575) and question 57 (outer loading = 0.1633), these were removed.

For market sensing and influencing customer preferences all questions could be used for further analysis, as they showed significantly high loadings (>0.61) on the respective concept.

As explained in chapter five, the cut-off criterion for outer standardised loadings is set at 0.5 since research regarding market driving is in its early stages (Chin, 1998:325). This, however, also implies that residual variance for items with loadings below 0.7 will be higher. As indicated by Falk and Miller (1992:64), residual variance accounts for variance that does not contribute to the definition of the latent variable.

After all indicators with low loadings had been removed, the market-driving measurement model was calculated, resulting in the following outer loadings, AVE values and composite reliability.

TABLE 6.9: Outer loadings, AVE and composite reliability of reflective concepts for market driving after recalculation

Concept / Indicator	Outer loading after recalculation	AVE	Composite reliability
Alliance formation			
Q55	0.7404*	0.6284	0.8350
Q56	0.8199*		
Q58	0.8152*		
Market sensing			
Q61	0.7672*	0.5540	0.8608
Q62	0.8002*		
Q63	0.6608*		
Q64	0.7116*		
Q65	0.7733*		
Influencing customer preferences			
Q50	0.6896*	0.5587	0.8345
Q51	0.7052*		
Q52	0.7782*		
Q53	0.8100*		

Note: * indicates significance at 0.01 level

The average variance extracted (AVE) for each reflective concept was higher than 0.5, which indicates that 50% of the variance of the indicators was accounted for by the latent variable. This shows satisfactory convergent validity (Barclay, Higgins & Thompson, 1995:297; Chin, 1998:321; Fornell & Larcker, 1981:46; Henseler *et al*., 2009:299).

Composite reliability for the three first-order reflective concepts, alliance formation (0.8350), market sensing (0.8608) and customer preferences (0.8345) was acceptable, which means that the indicators measured the latent variable well. The interpretation of composite reliability is the same as for Cronbach's alpha, which considers values above 0.7 as acceptable (Henseler *et al*., 2009:299).

The next step in data analysis deals with the level and significance of path coefficients (Hair *et al*., 2011:147). The path coefficients determine the contribution each concept makes to form the index and represent indicator relevance of the formative concepts (Götz *et al*., 2010:698; Henseler *et al*., 2009:301). Path values can range from -1 to 1, whereby values of one indicate a perfect positive correlation which would indicate that the same concept is measured twice (Lehner & Haas, 2010:82). Lohmöller (1989:60) restricts the path model and considers paths from 0.1 as significant. However, Falk and Miller (1992:77) argue that given the theoretical formulation of the model, all paths should be reported and their contribution towards the overall model should be presented. For the purpose of this study all paths are reported and their magnitude and significance are presented.

The path coefficients for alliance formation (0.259), market sensing (0.552) and influencing customer preferences (0.413) were all positive and significant. Market sensing and influencing customer preferences contributed to a higher degree to the explanation of market driving than did alliance formation.

Revisiting the hypothesis stated in chapter one, the following can be deduced:

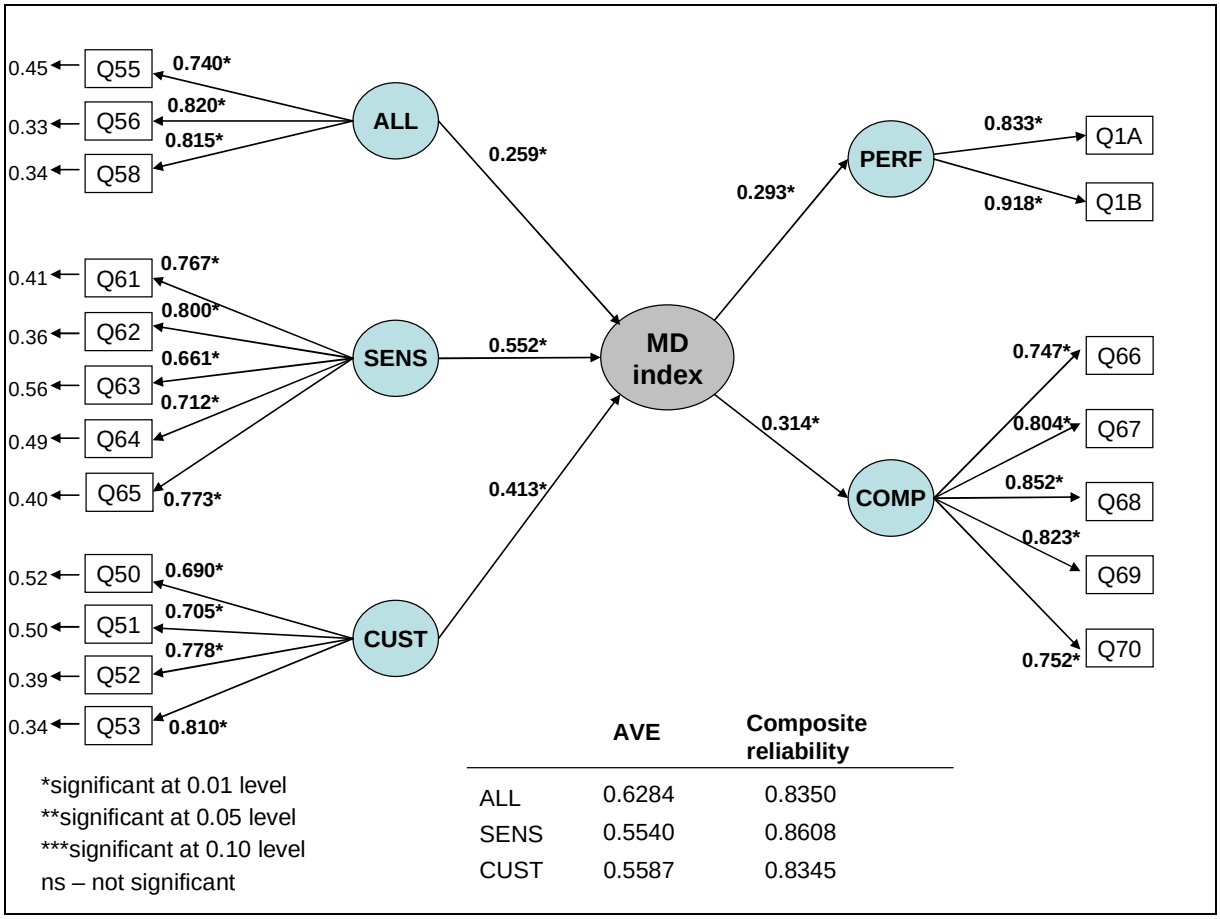
Hypothesis $H_0$1 is rejected: Market driving cannot be measured with market-sensing activities.

Hypothesis $H_0$2 is rejected: Market driving cannot be measured with activities related to influencing customer preferences.

Hypothesis $H_0$3 is rejected: Market driving cannot be measured with alliance formation activities.

Figure 6.1 summarises the measurement model for market driving.

FIGURE 6.1: Measurement model for market driving



	AVE	Composite reliability
ALL	0.6284	0.8350
SENS	0.5540	0.8608
CUST	0.5587	0.8345

6.3.2 Measurement model for corporate entrepreneurial management

Corporate entrepreneurial management (CE) is a second-order formative, first-order reflective construct which was measured by risk-taking (RISK), management support (MGT) and organisational structure (STRU).

Risk-taking (RISK) consisted of two variables that showed satisfactory loadings (0.9282 and 0.7575).

Management support (MGT) was designed as a concept including four variables that also showed satisfactory loadings (0.8134, 0.8723, 0.8725, 0.8955).

Organisational structure (STRU) considered four variables, of which two showed low loadings (0.1536; -0.3989). These two variables were therefore removed from further analysis.

After recalculating the measurement model with the retained variables, the following outer loadings, AVE values and composite reliability were achieved.

TABLE 6.10: Outer loadings, AVE and composite reliability of reflective concepts for corporate entrepreneurial management after recalculation

Concept / Indicator	Outer loading after recalculation	AVE	Composite reliability
Risk-taking			
Q9	0.8527*	0.7301	0.8440
Q10	0.8563*		
Management support			
Q5	0.8823*	0.7488	0.9226
Q6	0.8899*		
Q7	0.8360*		
Q8	0.8521*		
Organisational structure			
Q3	0.9204*	0.8309	0.9076
Q4	0.9025*		

Note: * indicates significance at 0.01 level

Average variance extracted (AVE) showed a satisfactory level for all reflective concepts with values of 0.7301, 0.7488 and 0.8309. Composite reliability was very satisfactory with values at 0.844 and higher.

The path coefficients for risk-taking (-0.441) and organisational structure (0.588) explained corporate entrepreneurial management well and were significant at the 0.01 level and 0.05 level respectively. The path for management support was lower (0.327) and not significant. As corporate entrepreneurial management was measured as a formative construct, the concepts could have either a positive or negative relationship with the construct (Diamantopoulos *et al*., 2008:1205).

Although the path for management support was not significant it was retained for further analysis, since the removal of a concept in formative measurement could alter the nature of the overall construct (Diamantopoulos *et al*., 2008:1205).

Revisiting the hypothesis stated in chapter one, the following can be deduced:

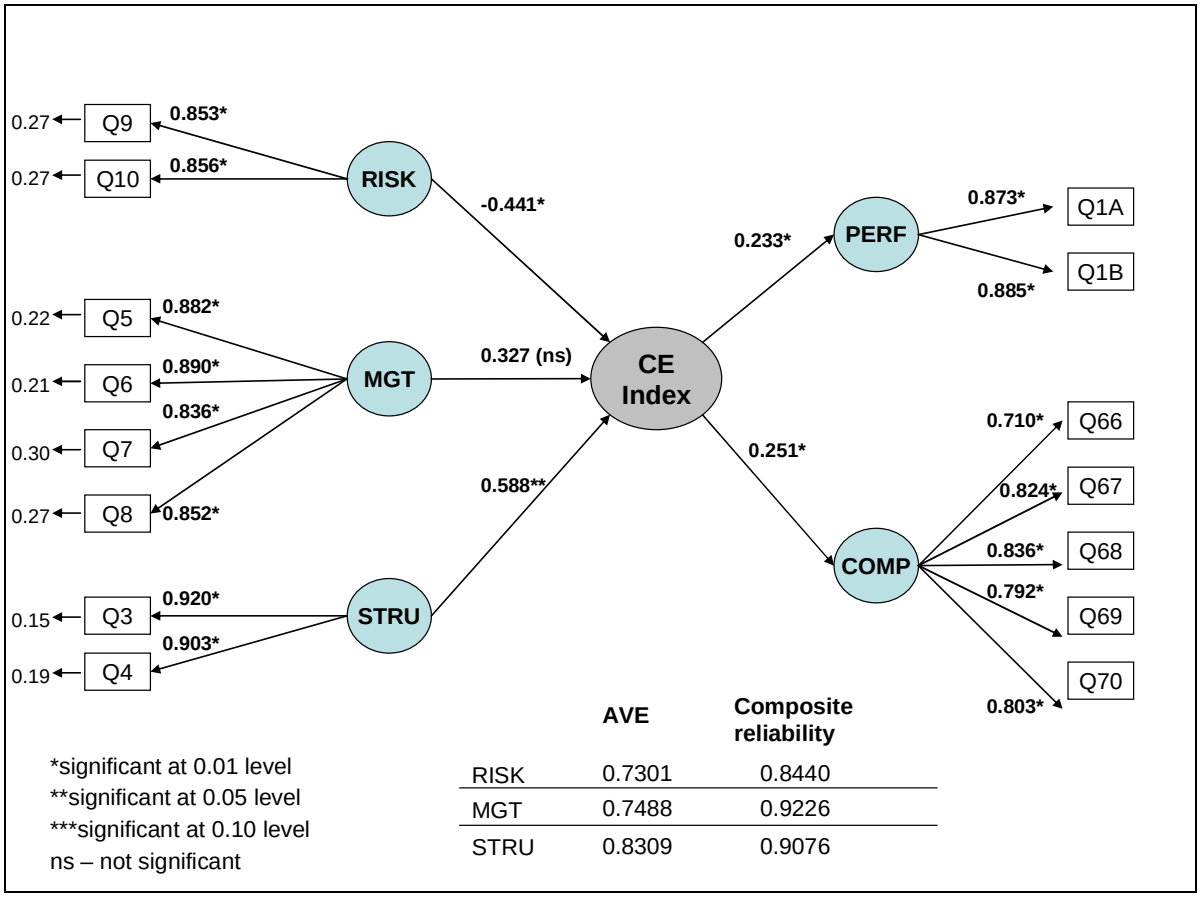
Hypothesis $H_0$4 is rejected: Corporate entrepreneurial management cannot be measured with risk-taking activities.

Hypothesis $H_0$5 cannot be rejected: Corporate entrepreneurial management cannot be measured with management support.

Hypothesis $H_0$6 is rejected: Corporate entrepreneurial management cannot be measured with organisational structure.

The following figure summarises the measurement model for corporate entrepreneurial management.

FIGURE 6.2: Measurement model for corporate entrepreneurial management



	AVE	Composite reliability
RISK	0.7301	0.8440
MGT	0.7488	0.9226
STRU	0.8309	0.9076

6.3.3 Measurement model for entrepreneurial capital

Entrepreneurial capital (CA) was designed as a second-order reflective, first-order reflective construct. The first-order concepts were financial capital (FIN), human capital (HUM) and social capital (SOC).

Financial capital consisted of three measurement questions. Due to low loadings of question 36 (-0.3941) it was removed from further analysis.

Human capital and social capital were measured using three variables each. All variables could be retained for further analysis since the loadings were acceptable (>0.60).

After recalculating the measurement model with the retained variables, the following outer loadings, AVE values and composite reliability were achieved.

TABLE 6.11: Outer loadings, AVE and composite reliability of reflective concepts for entrepreneurial capital after recalculation

Concept / Indicator	Outer loading after recalculation	AVE	Composite reliability
Latent variable (CA)	-	0.2666	0.7404
Financial capital			
Q35	0.8930*	0.7144	0.8330
Q37	0.7964*		
Human capital			
Q41	0.6138*	0.4781	0.7321
Q42	0.7296*		
Q43	0.7248*		
Social capital			
Q38	0.6502*	0.5334	0.7730
Q39	0.7954*		
Q40	0.7381*		

Note: * indicates significance at 0.01 level

The average variance extracted (AVE) for the financial capital (0.7144) and social capital (0.5334) concept was higher than 0.5, which indicates that the latent variables captured at least 50% of the variance of the indicators (Chin, 1998:321; Fornell & Larcker, 1981:46; Henseler *et al*., 2009:299). Human capital (0.4781) and the overall construct entrepreneurial capital (0.2666) showed lower levels of AVE, which indicated a lack of convergent validity (Hair *et al*., 2011:146).

Composite reliability for all reflective concepts: financial capital (0.833), human capital (0.7321), and social capital (0.7730), and the overall construct entrepreneurial capital (0.7404) were acceptable, which indicated that the variables adequately represented the latent variable.

Considering the path coefficients which reflect the latent variable, it can be noted that all paths were significant at the 0.01 level. Financial capital (0.604), human capital (0.706) and social capital (0.757) were all well reflected by their latent variable.

Revisiting the hypothesis for entrepreneurial capital the following can be deduced:

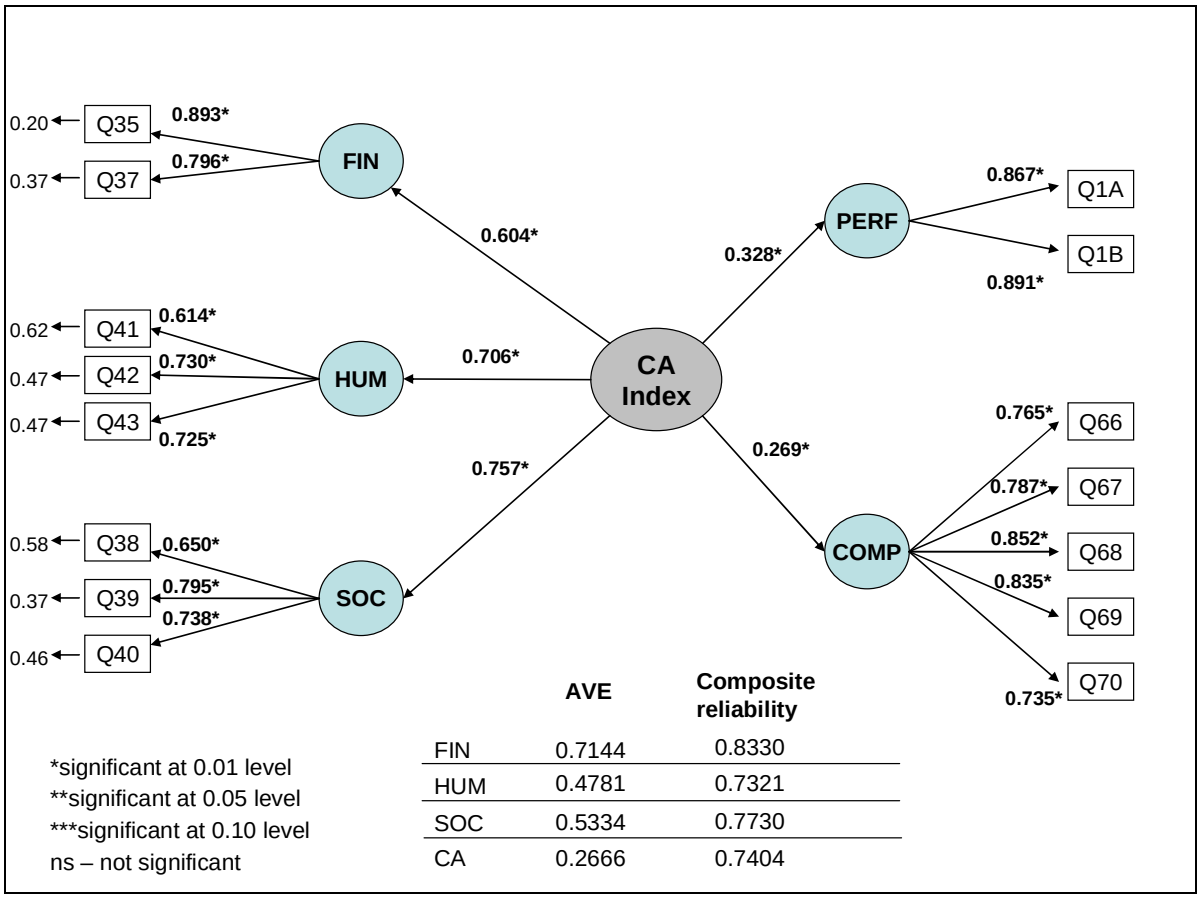
Hypothesis $H_0$7 is rejected: Entrepreneurial capital does not reflect financial capital.

Hypothesis $H_0$8 is rejected: Entrepreneurial capital does not reflect human capital.

Hypothesis $H_0$9 is rejected: Entrepreneurial capital does not reflect social capital.

The following figure summarises the measurement model for entrepreneurial capital.

FIGURE 6.3: Measurement model for entrepreneurial capital



	AVE	Composite reliability
FIN	0.7144	0.8330
HUM	0.4781	0.7321
SOC	0.5334	0.7730
CA	0.2666	0.7404

6.3.4 Measurement model for strategic orientation

Strategic orientation (SO) was designed as a second-order formative, first-order reflective construct. The reflective concepts included information generation (GEN), information dissemination (DIS), interfunctional coordination (COO) and innovation intensity (INN).

Information generation (GEN) was designed with four questions. However, question 18 had to be deleted due to low outer loading (0.1428).

Information dissemination (DIS) consisted of four questions, of which question 23 had to be removed due to low outer loading (0.1895).

Interfunctional coordination (COO) included four questions of which all showed high loadings (>0.69).

Innovation intensity (INN) was based on three questions, of which question 31 had to be removed due to low loading (-0.1256).

After recalculating the measurement model with the retained variables, the following outer loadings, AVE values and composite reliability were achieved.

TABLE 6.12: Outer loadings, AVE and composite reliability of reflective concepts for strategic orientation after recalculation

Concept / Indicator	Outer loading after recalculation	AVE	Composite reliability
Information generation			
Q17	0.7121*	0.5878	0.8100
Q19	0.7600*		
Q20	0.8239*		
Information dissemination			
Q21	0.8537*	0.7087	0.8793
Q22	0.8754*		
Q24	0.7942*		
Interfunctional coordination			
Q25	0.8048*	0.6569	0.8840
Q26	0.8762*		
Q27	0.8291*		
Q28	0.7243*		
Innovation intensity			
Q29	0.9131*	0.7922	0.8840
Q30	0.8664*		

Note: * indicates significance at 0.01 level

Average variance extracted (AVE) showed a satisfactory level for all reflective concepts, with values between 0.5878 and 0.7922. Composite reliability was very satisfactory, with values of 0.8100 and higher.

The path coefficients for information generation, information dissemination and innovation intensity were positive and significant. Interfunctional coordination showed a positive but non-significant path. Although interfunctional coordination was not significant, it was retained for further analysis since the removal of a concept in formative measurement could alter the nature of the overall construct (Diamantopoulos *et al*., 2008:1205).

The highest contribution to the explanation of strategic orientation was made by information dissemination (0.426), followed by information generation (0.327) and innovation intensity (0.251). The lowest contribution was made by interfunctional coordination (0.229).

Revisiting the hypothesis the following can be deduced:

Hypothesis $H_0$10 is rejected: Strategic orientation cannot be measured with information generation.

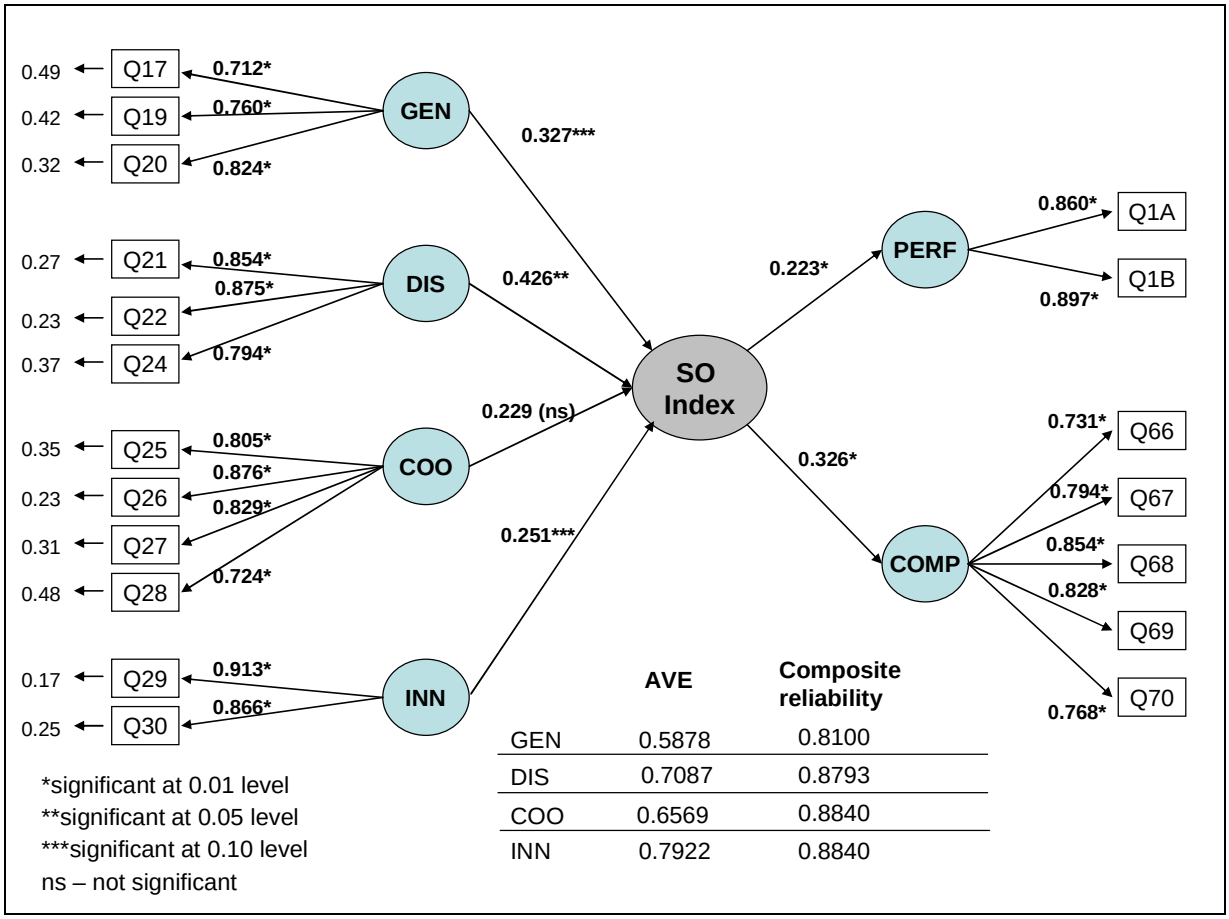
Hypothesis $H_0$11 is rejected: Strategic orientation cannot be measured with information dissemination.

Hypothesis $H_0$12 cannot be rejected: Strategic orientation cannot be measured with interfunctional coordination.

Hypothesis $H_0$13 is rejected: Strategic orientation cannot be measured with innovation intensity.

The following figure summarises the measurement model for strategic orientation.

FIGURE 6.4: Measurement model for strategic orientation



	AVE	Composite reliability
GEN	0.5878	0.8100
DIS	0.7087	0.8793
COO	0.6569	0.8840
INN	0.7922	0.8840

6.3.5 Measurement model for entrepreneurial behaviour

Entrepreneurial behaviour (BE) is a second-order formative, first-order reflective construct consisting of proactiveness (PRO) and responsiveness to information (RESP).

Proactiveness (PRO) consisted of three variables. One variable showed low loading (0.0081) and one variable demonstrated a negative loading (-0.3959). In order to obtain internally consistent scales it would be necessary to remove both items from the scale (Spector, 1992:29). The negative sign of the variable was also reflected in the concept's composite reliability, which was very low (0.0806). However, since a latent variable that is constituted by only one variable cannot account for measurement error (Fornell, 1983:445), the indicator with the negative loading was retained for further analysis since it showed the higher loading of the two variables. The negative loading could also be an indication that the concept of proactiveness should have been modelled as a formative concept. As outlined in chapter four,

measures of formative concepts can either be positive or negative, as they do not have to share a common theme (Diamantopoulos *et al*., 2008:1205).

Responsiveness to information (RESP) was measured with three variables which all showed acceptable outer loadings (>0.60).

After recalculating the measurement model with the retained variables, the following outer loadings, AVE values and composite reliability were achieved.

TABLE 6.13: Outer loadings, AVE and composite reliability of reflective concepts for entrepreneurial behaviour after recalculation

Concept / Indicator	Outer loadings after recalculation	AVE	Composite reliability
Proactiveness			
Q11	0.8865*	0.5826	0.0806
Q12	-0.6160*		
Responsiveness to information			
Q14	0.6614*	0.6100	0.8225
Q15	0.8684*		
Q16	0.7990*		

Note: * indicates significance at 0.01 level

Average variance extracted (AVE) showed a satisfactory level for both reflective concepts, with values between 0.5826 and 0.61. This indicates that although proactiveness is not a unidimensional concept it measures the latent variable well.

The path coefficients for the two concepts were significant at the 0.01 level. The highest contribution to the explanation of entrepreneurial behaviour was made by proactiveness (0.595), followed by responsiveness to information (0.557).

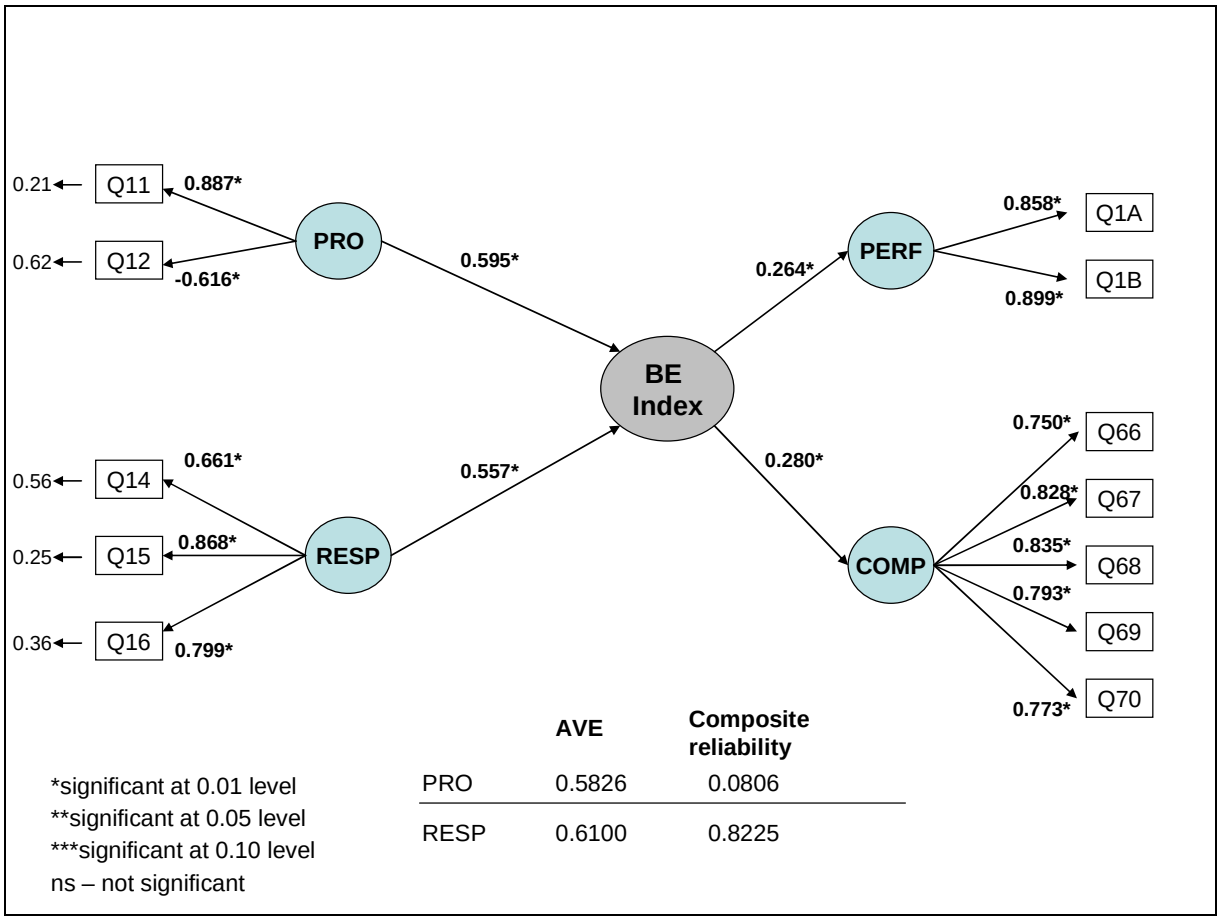
Revisiting the hypothesis for entrepreneurial behaviour, the following can be deduced:

Hypothesis $H_0$14 is rejected: Entrepreneurial behaviour cannot be measured with proactiveness.

Hypothesis $H_0$15 is rejected: Entrepreneurial behaviour cannot be measured with responsiveness to information.

The following figure summarises the measurement model for entrepreneurial behaviour.

FIGURE 6.5: Measurement model for entrepreneurial behaviour



	AVE	Composite reliability
PRO	0.5826	0.0806
RESP	0.6100	0.8225

6.3.6 Measurement model for firm performance and relative competitive strength

The measurement model for firm performance (PERF) and relative competitive strength (COMP) was established as a part of the structural model.

Firm performance (PERF) was originally measured with three variables. However, question 1C showed low loading (0.4629) and was hence deleted.

Relative competitive advantage (COMP) was measured with five variables. All variables showed high loadings (>0.7479) and were hence retained for further analysis.

After recalculating the measurement model with the retained variables, the following outer loadings, AVE values and composite reliability were achieved.

TABLE 6.14: Outer loadings, AVE and composite reliability of reflective concepts for firm performance and relative competitive strength after recalculation

Concept / Indicator	Outer loading after recalculation	AVE	Composite reliability
Firm performance			
Q1A	0.8330*	0.7687	0.8690
Q1B	0.9185*		
Relative competitive strength			
Q66	0.7471*	0.6349	0.8966
Q67	0.8043*		
Q68	0.8522*		
Q69	0.8233*		
Q70	0.7520*		

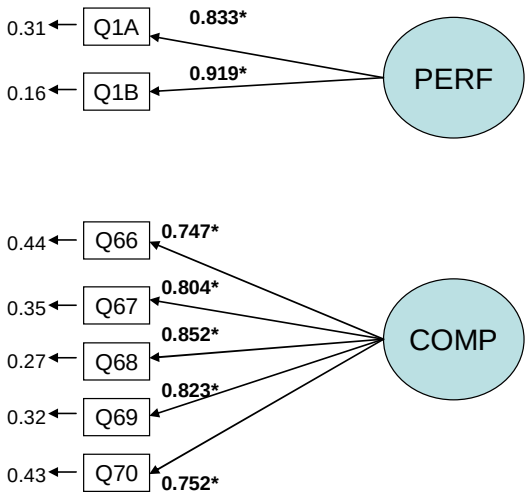
Note: * indicates significance at 0.01 level

Average variance extracted (AVE) showed a satisfactory level for both reflective concepts with values of 0.7687 for firm performance and 0.6349 for relative competitive strength. Composite reliability was very satisfactory, with values of 0.8690 for firm performance and 0.8966 for relative competitive strength.

The path coefficients for firm performance and relative competitive strength were analysed in the structural model as they were considered as endogenous concepts in the model.

The following figure summarises the measurement model for firm performance and relative competitive strength.

FIGURE 6.6: Measurement model for firm performance and relative competitive strength



	AVE	Composite reliability
PERF	0.7687	0.8690
COMP	0.6349	0.8966

*significant at 0.01 level
**significant at 0.05 level
***significant at 0.10 level
ns – not significant

6.4 STRUCTURAL MODELS

Once the measurement models had been analysed, the structural model which considered the relationships between latent variables could be considered.

6.4.1 Direct effects model (model 1)

As outlined in chapter four, the direct-effects model considers the direct relationships between the exogenous latent variables, corporate entrepreneurial management (CE), entrepreneurial behaviour (BE), strategic orientation (SO) and entrepreneurial capital (CA) and relates them to the endogenous latent variable market-driving ability (MD-ability) and its outcomes parameters, firm performance (PERF) and relative competitive strength (COMP).

As outlined in chapter five, the two primary evaluation criteria for the structural model are the coefficient of determination (R^2) and the magnitude, sign and significance of the path coefficients (Hair *et al*., 2011:147).

R^2 for the endogenous latent variable market-driving ability was 0.612, which indicated almost substantial explanatory power according to the values described by Chin (1998:328).

Path coefficients were interpreted as standardised beta coefficients. Path coefficients can be assessed on their sign, magnitude and their significance, which leads to an acceptance or rejection of the a priori formulated hypothesis (Hair *et al*., 2011:147; Henseler *et al*., 2009:303). Standardised path coefficients can have values between one and minus one. Values close to zero indicate a weak influence on the construct, whereas values close to one indicate a strong influence (Lehner & Haas, 2010:82; Nitzl, 2010:34).

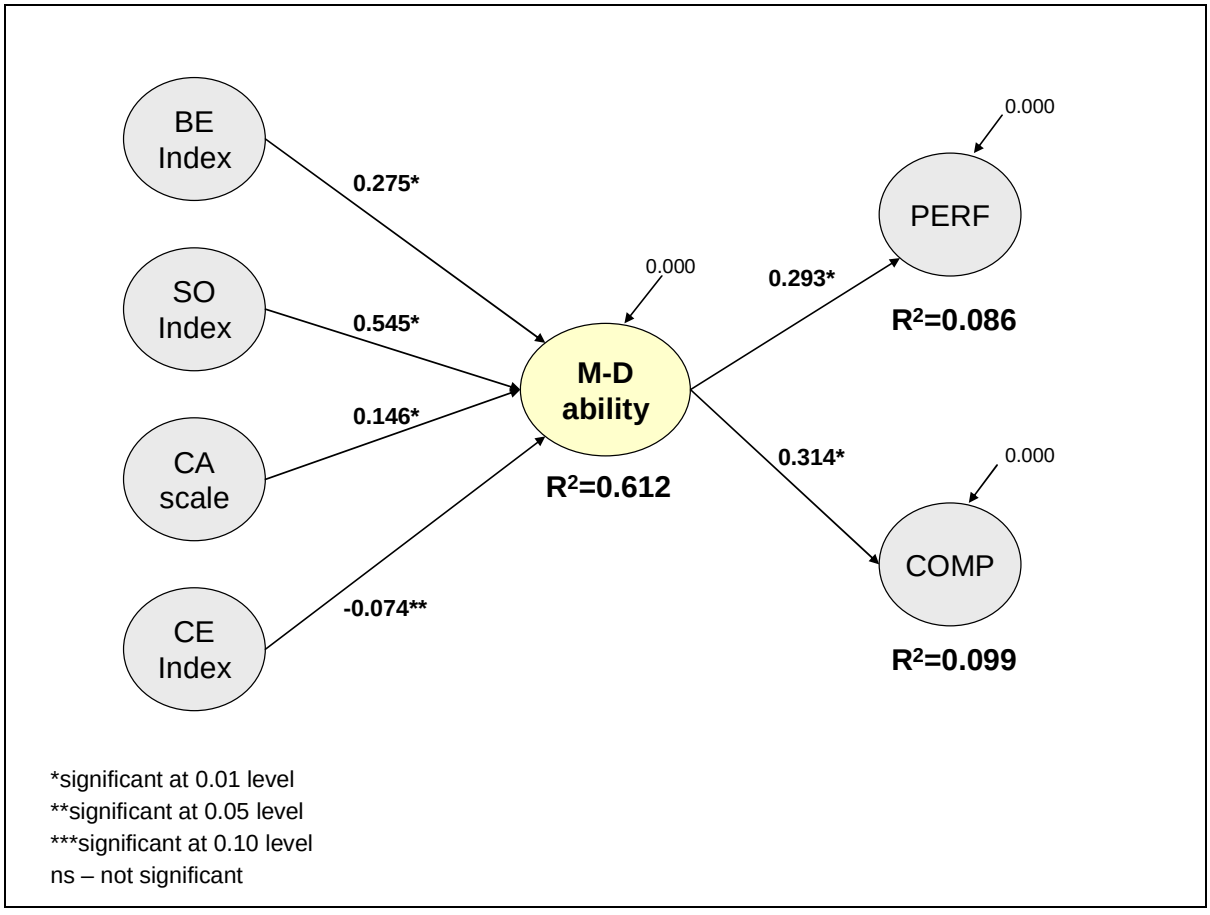
Figure 6.7 shows the path coefficients for the exogenous variables on market-driving ability, as well as the paths for the outcomes parameters firm performance (PERF) and relative competitive strength (COMP).

All path coefficients showed significant results under a one-tailed test via bootstrapping. Strategic orientation (SO) and entrepreneurial behaviour (BE) influence market-driving ability substantially, while entrepreneurial capital (CA) has a weaker influence. Corporate entrepreneurial management (CE) has a slightly negative impact on market-driving ability.

Although the contribution of entrepreneurial capital (CA) and corporate entrepreneurial management (CE) was not high, both constructs were retained for the structural analysis for two reasons. First, the constructs present distinct causes of market-driving ability, and deleting a construct because of its negative or low impact would potentially alter the nature of market-driving ability (Bollen & Lennox, 1991:308; Diamantopoulos *et al*., 2008:1205). Second, as indicated by Chin (1995:4), PLS tends to overestimate loadings and underestimate the structural paths. Hence, the structural paths might even be higher if the number of indicators and sample size increase indefinitely.

The following figure summarises the path coefficients and R^2 for the direct effects model.

FIGURE 6.7: Direct effects model



The path coefficient for corporate entrepreneurial management (-0.074) is not positive, but significant. Therefore the following can be deduced:

Hypothesis $H_0$16 cannot be rejected: Corporate entrepreneurial management does not positively influence market-driving ability.

The path coefficient for entrepreneurial capital (0.146) is positive and significant, which leads to the following deduction:

Hypothesis $H_0$17 is rejected: Entrepreneurial capital does not positively influences market-driving ability.

The path coefficient for strategic orientation (0.545) is positive and significant, which leads to the following deduction:

Hypothesis $H_0$18 is rejected: Strategic orientation does not positively influence market-driving ability.

The path coefficient for entrepreneurial behaviour (0.275) is positive and significant, which leads to the following deduction:

Hypothesis $H_0$19 is rejected: Entrepreneurial behaviour does not positively influence market-driving ability.

The path coefficient for market-driving ability towards firm performance (0.293) is positive and significant, which leads to the following deduction:

Hypothesis $H_0$20 is rejected: Market-driving ability does not positively influence firm performance.

The path coefficient for market-driving ability towards relative competitive strength (0.314) is positive and significant, which leads to the following deduction:

Hypothesis $H_0$21 is rejected: Market-driving ability does not positively influence relative competitive strength.

A further evaluation criterion for structural models is the effect size (f^2), which determines the impact of the exogenous latent variable on the endogenous latent variable (Henseler *et al.*, 2009:303). Calculation followed the formula outlined in chapter five. According to Henseler and Chin (2010:105), values of 0.02 indicate a small effect size. Values of 0.15 indicate a medium effect size and values of 0.35 indicate a large effect size.

As can be seen from Table 6.15 the effect size for strategic orientation was the largest, at 0.358, followed by a medium effect size for entrepreneurial behaviour (0.115) and a small effect size for entrepreneurial capital (0.037). The lowest impact on the structural model was made by corporate entrepreneurial management (0.007).

TABLE 6.15: Effect size (f^2) for direct effects model

Model	R^2	f^2
Overall model	0.612	-
Model without BE	0.567	0.115
Model without SO	0.473	0.358
Model without CA	0.598	0.037
Model without CE	0.609	0.007

To measure the predictive quality of the model, the Stone-Geisser's Q^2 can be applied (Hair *et al*., 2011:147). As Q^2 can only be applied to endogenous reflective constructs predictive quality for firm performance and relative competitive strength can be assessed. Predictive quality for firm performance was 0.0641 and for relative competitive strength 0.0623. Since both values were larger than zero, it can be deduced that market-driving ability exhibits predictive relevance on firm performance and relative competitive strength (Hair *et al*., 2011:147). Q^2 measures of 0.02 indicate small predictive relevance; values at 0.15 indicate medium relevance and values at 0.35 show significant predictive relevance (Henseler *et al*., 2009:305).

6.4.2 Moderating effects model: Management level (model 2)

As outlined in chapter four, moderating effects are considered for the structural models. Moderators are qualitative or quantitative variables that impact on the

direction and/or strength of the relationship between the exogenous latent variables and market-driving ability (Helm *et al*., 2010:524; Henseler & Fassott, 2010:713).

The first moderator was management level. The respondents assigned themselves into one of the following groups:

- Level 1: Top management: Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Head of Business Units etc.
- Level 2: Middle management: Senior Director, Group Leader etc.
- Level 3: Junior management: Band Managers, Financial Manager etc.

The frequencies were outlined in the descriptive analysis in this chapter. Top management consisted of n = 66 respondents, middle management comprised n = 174 respondents and junior management included n = 88 respondents.

For the modelling of moderating effects in PLS, various approaches can be taken depending on the type of moderating variable. As management level could be considered as a categorical variable, the moderating effect was tested by means of group comparisons. Analyses were conducted for each group and the outcomes were compared across groups (Henseler & Chin, 2010:83-84; Henseler & Fassott, 2010:719).

In a first step the measurement models need to be recalculated for all groups separately in order to account for different loadings/weights that can result (Carte & Russel, 2003:493). In a second step the structural model is calculated to obtain path coefficients. The path coefficients are presented in Table 6.16. Significance was tested with the bootstrapping technique considering n = 500 resamples. A two-tailed test was applied.

TABLE 6.16: Path coefficients for different management levels

Path	Path coefficients		
	Level 1	Level 2	Level 3
CE → MD ability	0.2147 (ns)	-0.0989***	0.1693**
CA → MD ability	0.0475 (ns)	0.2137*	0.1588***
SO → MD ability	0.2555**	0.4237*	0.4976*
BE → MD ability	0.3425*	0.3786*	0.1024 (ns)

Note: * indicates significance at 0.01 level; ** indicates significance at 0.05 level, *** indicates significance at 0.10 level; (ns) indicates non significance

In order to test the hypothesis by statistically comparing the path coefficients between the different management levels, partial least squares multiple group analysis (PLS-MGA) was used. Usually a t-test would be applied to test for group differences. However, as indicated in the descriptive statistics of this chapter, variables are not normally distributed. As PLS-MGA accounts for the distribution-free assumption of the data, this approach was applied. PLS-MGA tests whether the parameters from two groups are different (Henseler *et al*., 2009:308-309). The following formula is used to determine the probability that two samples are different (Henseler *et al.*, 2009:309):

$$P(b^{(1)} > b^{(2)} \left| \beta^{(1)} \le \beta^{(2)} \right.) = 1 - \sum_{v_{i,j}} \frac{\Theta(2\bar{b}^{(1)} - b_j^{(1)} - 2\bar{b}^{(2)} + b_i^{(2)})}{J^2}$$

As the formula only allows for a pair-wise comparison, a total of three comparisons were made. First, level one and level two were compared. Second, level two and level three were tested and finally level one and level three. Before testing, an alpha level needs to be specified (Henseler *et al*., 2009:309). The alpha level was set at 5%.

The following tables present the pair wise comparisons.

TABLE 6.17: Path coefficients and PLS-MGA values for level 1 and level 2

Path	Path coefficient		PLS-MGA p value
	Level 1	Level 2	
CE → MD ability	0.2147(ns)	-0.0989***	0.0001
CA → MD ability	0.0475 (ns)	0.2137*	0.1026
SO → MD ability	0.2555**	0.4237*	0.0542
BE → MD ability	0.3425*	0.3786*	0.3608
α = 0.05			

TABLE 6.18: Path coefficients and PLS-MGA values for level 2 and level 3

Path	Path coefficient		PLS-MGA p value
	Level 2	Level 3	
CE → MD ability	-0.0989***	0.1693**	0.0001
CA → MD ability	0.2137*	0.1588***	0.2944
SO → MD ability	0.4237*	0.4976*	0.2876
BE → MD ability	0.3786*	0.1024 (ns)	0.0073
α = 0.05			

TABLE 6.19: Path coefficients and PLS-MGA values for level 1 and level 3

Path	Path coefficient		PLS-MGA p value
	Level 1	Level 3	
CE → MD ability	0.2147(ns)	0.1693**	0.4306
CA → MD ability	0.0475 (ns)	0.1588***	0.2786
SO → MD ability	0.2555**	0.4976*	0.0364
BE → MD ability	0.3425*	0.1024 (ns)	0.0308
α = 0.05			

Note: * indicates significance at 0.01 level; ** indicates significance at 0.05 level, *** indicates significance at 0.10 level; (ns) indicates non significance

The relationship between corporate entrepreneurial management (CE) and market-driving ability was seen to be partly influenced by management level. There was a significant difference between path coefficients for top managers and middle managers ($p<0.001$) and middle managers and junior managers ($p<0.001$). Top managers (0.2147) and junior managers (0.1693) perceived the influence of

corporate entrepreneurial management on market-driving ability to be similarly positive. It is interesting to see that middle managers (-0.0989) do not see positive a relationship between corporate entrepreneurial management and market-driving ability.

Revisiting hypothesis $H_0$22 it can be deduced that:

Hypothesis $H_0$22 is rejected: The path between **corporate entrepreneurial management** and market-driving ability will not differ between various levels of management.

> **Hypothesis $H_0$22a is rejected**: The path between corporate entrepreneurial management and market-driving ability will not differ between top management (level 1) and middle management (level 2).
>
> **Hypothesis $H_0$22b is rejected:** The path between corporate entrepreneurial management and market-driving ability will not differ between middle management (level 2) and junior management (level 3).
>
> **Hypothesis $H_0$22c cannot be rejected:** The path between corporate entrepreneurial management and market-driving ability will not differ between top management (level 1) and junior management (level 3).

Considering entrepreneurial capital (CA), it can be seen from the tables that top managers (0.0475) did not see a relationship between entrepreneurial capital and market-driving ability. Middle management (0.2137) and junior management (0.1588) levels assessed the relationship to be positive; however, no significant differences between the management levels could be established.

Revisiting hypothesis $H_0$23 it can be deduced that:

Hypothesis $H_0$23 cannot be rejected: The path between **entrepreneurial capital** and market-driving ability will not differ between various levels of management.

Hypothesis $H_0$23a cannot be rejected: The path between entrepreneurial capital and market-driving ability will not differ between top management (level 1) and middle management (level 2).

Hypothesis $H_0$23b cannot be rejected: The path between entrepreneurial capital and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

Hypothesis $H_0$23c cannot be rejected: The path between entrepreneurial capital and market-driving ability will not differ between top management (level 1) and junior management (level 3).

Strategic orientation (SO) significantly positively influenced market-driving ability in the perception of all management levels. Middle managers (0.4237) and junior managers (0.4976) had a similar perception. Both perceived the relationship to be positive and significant, whereas top managers perceived it to be slightly less positive (0.2555). Considering the different perception between top managers and junior managers significant differences could be established between these two groups ($p = 0.0364$).

Revisiting hypothesis $H_0$24, the following deductions can be made:

Hypothesis $H_0$24 cannot be rejected: The path between **strategic orientation** and market-driving ability will not differ between various levels of management.

Hypothesis $H_0$24a cannot be rejected: The path between strategic orientation and market-driving ability will not differ between top management (level 1) and middle management (level 2).

Hypothesis $H_0$24b cannot be rejected: The path between strategic orientation and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

Hypothesis $H_0$24c is rejected: The path between strategic orientation and market-driving ability will not differ between top management (level 1) and junior management (level 3).

The relationship between entrepreneurial behaviour (BE) and market-driving ability is partly influenced by management level. Top and middle managers perceive the relationship to be significantly positive with path coefficients of 0.3425 and 0.3786 respectively. Junior managers perceive the relationship to be slightly less positive (0.1024). There is a significant difference between middle managers and junior managers ($p = 0.0073$) as well as between top and junior managers ($p = 0.0308$).

Revisiting hypothesis $H_0$25 the following deductions can be made:

Hypothesis $H_0$25 is rejected: The path between **entrepreneurial behaviour** and market-driving ability will not differ for various management levels.

Hypothesis $H_0$25a cannot be rejected: The path between entrepreneurial behaviour and market-driving ability will not differ between top management (level 1) and middle management (level 2).

Hypothesis $H_0$25b is rejected: The path between entrepreneurial behaviour and market-driving ability will not differ between middle management (level 2) and junior management (level 3).

Hypothesis $H_0$25c is rejected: The path between entrepreneurial behaviour and market-driving ability will not differ between top management (level 1) and junior management (level 3).

For the moderating effects model the effect size can be calculated. As with the overall model, the impact of exogenous latent variables on the endogenous latent variable moderated by the management level can be established.

Table 6.20 shows the effect size for top (level 1), middle (level 2) and junior (level 3) managers. Overall the effect size was small, with values ranging from 0.03 for middle

management to 0.01 for junior management. The effect size for top management was 0.02.

TABLE 6.20: Effect size (f^2) for the direct effects model

Model	R^2	f^2
Overall model	0.6120	-
Model without level 1	0.6197	0.02
Model without level 2	0.6019	0.03
Model without level 3	0.6166	0.01

6.4.3 Moderating effects model: Industry focus (model 3)

The second moderating effects model considered the industry focus. Four different sectors were included in the study:

- Pharmaceutical manufacturers
- Medical device manufacturers
- Pharmaceutical distributors/wholesalers
- Open medical schemes

The frequencies were outlined in the descriptive analysis of this chapter. Pharmaceutical manufacturers consisted of n = 228 respondents, medical device manufacturers accounted for n = 63 respondents, pharmaceutical distributors/wholesalers consisted of n = 30 respondents and open medical schemes included n = 7 respondents.

As the category of medical schemes was too small to conduct meaningful statistical analysis, it was not included in further analysis. Therefore, the hypotheses for open medical schemes were not tested and were excluded from further discussions.

As industry focus can also be considered as a categorical variable, the moderating effect was tested by means of group comparisons. Analyses were conducted for each group and the outcomes were compared across groups (Henseler & Chin, 2010:83-84; Henseler & Fassott, 2010:719).

In a first step the measurement models needed to be recalculated for all groups separately in order to account for different loadings/weights that could result (Carte & Russel, 2003:493). In a second step the structural model was calculated to obtain path coefficients. The path coefficients are presented in Table 6.21. Significance was tested with the bootstrapping technique, considering n = 500 resamples. A two-tailed test was applied.

TABLE 6.21: Path coefficients for different industries

Path	Path coefficients		
	Pharmaceutical manufacturer	**Medical device manufacturer**	**Pharm. distributor/ wholesaler**
CE → MD ability	-0.0775***	0.1275 (ns)	0.2694***
CA → MD ability	0.1518*	0.3294**	0.3460***
SO → MD ability	0.4989*	0.1947***	-0.0165 (ns)
BE → MD ability	0.2932*	0.2902**	0.4394*

For hypothesis testing the same procedure was followed as with the analysis of management level as a moderator. PLS-MGA was used to determine the probability that two samples were different (Henseler *et al*., 2009:309). The alpha level was set at 5%.

The following tables present the pair wise comparisons.

TABLE 6.22: Path coefficients and PLS-MGA values for pharmaceutical manufacturers and medical device manufacturers

Path	Path coefficient		PLS-MGA p value
	Pharmaceutical manufacturer	**Medical device manufacturer**	
CE → MD ability	-0.0775***	0.1275 (ns)	0.0000
CA → MD ability	0.1518*	0.3294**	0.1682
SO → MD ability	0.4989*	0.1947***	0.0013
BE → MD ability	0.2932*	0.2902**	0.4912
α = 0.05			

TABLE 6.23: Path coefficients and PLS-MGA values for medical device manufacturers and pharmaceutical distributors/wholesalers

Path	Path coefficient		PLS-MGA p value
	Medical device manufacturer	Pharmaceutical distributor/wholesaler	
CE → MD ability	0.1275 (ns)	0.2694***	0.2329
CA → MD ability	0.3294**	0.3460***	0.4477
SO → MD ability	0.1947***	-0.0165 (ns)	0.0001
BE → MD ability	0.2902**	0.4394*	0.2092
α = 0.05			

TABLE 6.24: Path coefficients and PLS-MGA values for pharmaceutical manufacturers and pharmaceutical distributors/wholesalers

Path	Path coefficient		PLS-MGA p value
	Pharmaceutical manufacturer	Pharmaceutical distributor/wholesaler	
CE → MD ability	-0.0775***	0.2694***	0.0007
CA → MD ability	0.1518*	0.3460***	0.1369
SO → MD ability	0.4989*	-0.0165 (ns)	0.0000
BE → MD ability	0.2932*	0.4394*	0.1229
α = 0.05			

Note: * indicates significance at 0.01 level; ** indicates significance at 0.05 level, *** indicates significance at 0.10 level; (ns) indicates non significance

The path for corporate entrepreneurial management (CE) was perceived very differently across industries. Pharmaceutical manufacturers saw no relationship (-0.0775) between corporate entrepreneurial management and market-driving ability, whereas pharmaceutical distributors/wholesalers perceived the relationship to be significantly positive (0.2694). Medical device manufacturers also saw a positive relationship, but it was not significant (0.1275). The results of the pair-wise comparisons demonstrated significant differences between pharmaceutical manufacturers and medical device manufacturers ($p<0.001$) and pharmaceutical manufacturers and pharmaceutical distributors/wholesalers ($p<0.001$), which led to the following deductions.

Hypothesis $H_0$26 is rejected: The path between **corporate entrepreneurial management** and market-driving ability will not differ for various industries.

> **Hypothesis $H_0$26a is rejected**: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.
>
> **Hypothesis $H_0$26b cannot be rejected**: The path between corporate entrepreneurial management and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.
>
> **Hypothesis $H_0$26c is rejected**: The path between corporate entrepreneurial management and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

All industry sectors consider entrepreneurial capital (CA) to have a significantly positive influence on market-driving ability. Pharmaceutical manufacturers perceive the path to be less positive (0.1518) than medical device manufacturers (0.3294) and pharmaceutical distributors/wholesalers (0.3460). As the perception of the relationship is similar for all three sectors, no significant differences between sectors could be established.

Revisiting hypothesis $H_0$27 the following deductions can be made:

Hypothesis $H_0$27 cannot be rejected: The path between **entrepreneurial capital** and market-driving ability will not differ for various industries.

> **Hypothesis $H_0$27a cannot be rejected**: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.
>
> **Hypothesis $H_0$27b cannot be rejected**: The path between entrepreneurial capital and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

Hypothesis $H_0$27c cannot be rejected: The path between entrepreneurial capital and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

The relationship between strategic orientation (SO) and market-driving ability was neither positive nor significant for pharmaceutical distributors/wholesalers (-0.0165). Pharmaceutical manufacturers (0.4989) and, to a lesser extent, medical device manufacturers (0.1947) indicated a significant positive relationship. As the influence of strategic orientation on market-driving ability is quite different across industry sectors ($p \leq 0.01$), significant differences could be encountered.

Revisiting hypothesis $H_0$28 the following deductions can be made:

Hypothesis $H_0$28 is rejected: The path between strategic orientation and market-driving ability will not differ for various industries.

Hypothesis $H_0$28a is rejected: The path between strategic orientation and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.

Hypothesis $H_0$28b is rejected: The path between strategic orientation and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.

Hypothesis $H_0$28c is rejected: The path between strategic orientation and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

Overall entrepreneurial behaviour (BE) was considered to have a significantly positive influence on market-driving ability. Pharmaceutical manufacturers (0.2932) and medical device manufacturers (0.2902) had a very similar perception about the relationship. Distributors/wholesalers indicated that the relationship between entrepreneurial behaviour and market-driving ability was strong (0.4394).

Considering the unanimous positive perception across industry sectors, no significant differences could be found.

Revisiting hypothesis $H_0$29 the following deductions can be made:

Hypothesis $H_0$29 cannot be rejected: The path between entrepreneurial behaviour and market-driving ability will not differ for various industries.

> **Hypothesis $H_0$29a cannot be rejected:** The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical manufacturers and medical device manufacturers.
>
> **Hypothesis $H_0$29b cannot be rejected**: The path between entrepreneurial behaviour and market-driving ability will not differ between medical device manufacturers and pharmaceutical distributors/wholesalers.
>
> **Hypothesis $H_0$29c cannot be rejected**: The path between entrepreneurial behaviour and market-driving ability will not differ between pharmaceutical manufacturers and pharmaceutical distributors/wholesalers.

Table 6.25 shows the effect size for the three different industry sectors. The biggest impact on the model is made by pharmaceutical manufacturers, which shows a medium effect (0.18). The effect size for pharmaceutical distributors/wholesalers (0.06) and medical device manufacturers (0.03) can be considered as small.

TABLE 6.25: Effect size (f^2) for direct effects model

Model	R^2	f^2
Overall model	0.6120	-
without Pharm. manufacturers	0.6837	0.18
without Medical device manuf.	0.6253	0.03
without Pharm. distrib./wholes.	0.5871	0.06

6.5 CONCLUSION

This chapter addressed the descriptive and inferential statistics. First, it analysed biographical information of respondents.

Second, the measurement models for all latent variables: market driving, corporate entrepreneurial management, entrepreneurial capital, strategic orientation, entrepreneurial behaviour, firm performance and relative competitive strength were presented.

Third, the structural model for market-driving ability was estimated. It was explained that the exogenous latent variables represented by corporate entrepreneurial management, entrepreneurial capital, strategic orientation and entrepreneurial behaviour showed substantial explanatory power ($R^2 = 0.612$). Further, path coefficients were used to test the hypotheses for the direct effects model. Positive and significant paths were found for all exogenous latent variables except corporate entrepreneurial management, which was significant but did not show a positive relationship.

Fourth, moderating effects models for management level and industry focus were tested. The results for the management level indicate differing perceptions of the influence of corporate entrepreneurial management and entrepreneurial behaviour across the three levels. All management levels perceived entrepreneurial capital and strategic orientation to have a positive impact on market-driving ability. The results

across different industries showed that the impact of corporate entrepreneurial management and strategic orientation on market-driving ability is perceived differently across industries. The impact of entrepreneurial capital and entrepreneurial behaviour is considered similar across industries.

In the next chapter the main research purpose and findings will be summarised. Conclusions and recommendation will be presented. Finally, limitations of the study and its contribution to the field of research will be discussed.

CHAPTER 7:
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The purpose of the study was to measure market driving and determine firm-internal factors that influence an organisation's market-driving ability in the South African healthcare industry.

The primary research objective was supported by secondary objectives which were classified into objectives that could be achieved by means of a literature study and by means of an empirical case study.

The following paragraphs discuss the theoretical and practical implications of this study.

7.2 RESEARCH RESULTS AND THEORY REVISITED

7.2.1 Measuring market driving: Research implications

The literature discussing market driving argued that certain activities, such as market sensing, shaping customer preferences and alliance formation characterise the construct (Barlow Hills & Sarin, 2001, 2003; Ghauri *et al*., 2008; Harris & Cai, 2002; Jaworski *et al*., 2000). In chapters three and four market driving was described as a multidimensional construct consisting of a formative second-order object with reflective first-order indicators.

The results of this study have provided support for several claims that have been made about market driving.

Market sensing has been described as an important activity for market-driving firms to learn about opportunities and how the market reacts to strategic moves (Harris &

Cai, 2002:185). The results of this study showed that market-sensing activities positively contribute to the market-driving construct.

Influencing and educating customers about new products and hence trying to change behaviour has been found to be another important aspect of market driving in the literature (Barlow Hills & Sarin, 2003; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al*., 2000). The study also found support for a positive contribution of influencing customer preferences to form the market-driving construct.

The last concept considered in the measurement of market driving was alliance formation. Ghauri *et al*. (2008) argue that strong relationships with various stakeholders, such as suppliers, retailers or government authorities, are characteristic of market-driving firms. The study could support these claims, as alliance formation was shown to positively influence market driving.

Overall, the study showed that market driving can be measured by market sensing, influencing customer preferences and alliance formation. Although the measures of market driving only represent a selection of activities, the results provide a reliable basis for future research on the measurement of market driving.

7.2.2 Firm-internal factors influencing market-driving ability and outcomes of a market-driving approach

From the literature study several influencing factors on market-driving ability were identified. These factors were summarised under organisational characteristics and an entrepreneurial and market orientation perspective (Barlow Hills & Sarin, 2001, 2003; Carrillat *et al*., 2004; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al*., 2000; Schindehutte *et al*., 2008).

For the research study the following four latent variables were investigated: Corporate entrepreneurial management, entrepreneurial capital, strategic orientation and entrepreneurial behaviour.
Corporate entrepreneurial management included the concepts of risk-taking, management support and organisational structure. As outlined in the literature study

in chapter three, organisational capabilities and processes need to be present in order to achieve market-driving ability (Barlow Hills & Sarin, 2001; Carrillat *et al*., 2004).

The research study provided a partial confirmation of these factors. While organisational structure and management support were found to positively contribute to corporate entrepreneurial management, risk-taking was found to negatively influence the construct. Regarding the impact of corporate entrepreneurial management on market-driving ability, the study results showed that the construct impacts slightly negatively. It can therefore be deduced that, contrary to the findings of the literature study, corporate entrepreneurial management is not an enabling factor for market-driving ability in the overall model. However, when data were analysed across different business sectors it was found that pharmaceutical distributors/wholesalers did regard corporate entrepreneurial management as an influencing factor.

In the literature study it was suggested that market-driving ability also requires *entrepreneurial capital* to be present (Ghauri *et al*., 2008; Schindehutte *et al*., 2008). Entrepreneurial capital was represented in the form of financial, human and social capital in the study. The study showed that all three types of resources well reflect the construct of entrepreneurial capital. In accordance with the literature, the study found that entrepreneurial capital positively impacts on market-driving ability.

A *strategic orientation* is considered to be important for market-driving activities. Barlow Hills and Sarin (2001:219) state that a strategic orientation is formed by certain capabilities such as an understanding of customers and competitors and networking capability. Furthermore, the necessary presence of innovation in an organisation has been emphasised (Jaworski *et al.*, 2000; Kumar *et al*., 2000; Schindehutte *et al*., 2008). The research study considered aspects of information generation, dissemination, interfunctional coordination and innovation intensity in the construct of strategic orientation. The results provided support for the positive and significant influence of these factors in measuring the strategic orientation of the organisation. The study also provided support for a positive influence of strategic orientation on market-driving ability. Analysing the impact of strategic orientation

across different business sectors showed that strategic orientation is regarded as an influencing factor, particularly by pharmaceutical manufacturers, whereas pharmaceutical distributors/wholesalers consider it of little importance in influencing market-driving ability.

Entrepreneurial behaviour reflected in seeing opportunities and filling unmet needs in the market, is considered to enable market-driving ability (Kumar *et al.*, 2000). The research study included the specific behaviours of proactiveness and responsiveness to information. The results showed that both concepts well represent the entrepreneurial behaviour construct. It could also be demonstrated that entrepreneurial behaviour positively influences market-driving ability.

The outcomes of a market-driving approach have been described as impacting on firm performance and competitive advantage (Carrillat *et al*., 2004; Harris & Cai, 2001; Schindehutte *et al*., 2008). The results of this study support the findings described in the literature. Market-driving ability positively influences firm performance and relative competitive strength.

7.3 CONTRIBUTION TO BUSINESS SCIENCE

This study presented a way to measure market driving and identified firm-internal factors that influence market-driving ability. The study is the first of its kind in South Africa and also in the South African healthcare industry. The study made the following contributions to business science:

- The study presented literature on research at the interface between entrepreneurship and marketing, with a specific focus on market driving.
- As indicated by various researchers (Barlow Hills & Sarin, 2003; Carrillat *et al*., 2004; Harris & Cai,, 2002; Jaworski *et al*., 2000; Schindehutte *et al*., 2008) this study addressed the need to:
    - Develop a framework to capture market driving
    - Develop an approach to measure market driving
    - Identify organisational factors that influence a firm to become market driving

  - Identify and measure market-driving outcomes
  - Investigate market-driving behaviour in a competitive environment
- By means of the literature study, this research developed a framework to capture the measurement of market driving and its influencing firm-internal factors.
- The empirical study showed that:
  - Corporate entrepreneurial management, strategic orientation, entrepreneurial behaviour and market driving can be measured as formative constructs.
  - Market driving can be successfully measured by assessing a firm's market sensing, influencing customer preferences and alliance formation activities.
  - Market-driving ability is influenced by firm-internal factors such as entrepreneurial behaviour, strategic orientation and entrepreneurial capital.
  - Market-driving ability does not seem to be influenced by corporate entrepreneurial management.
  - Market-driving ability positively influences firm performance and relative competitive strength.
  - Market-driving ability in a competitive environment, such as the healthcare industry in South Africa, can be successfully measured.
  - The perception of influencing factors is moderated partly by the level of management and industry focus.
- The findings of this study provide a first statistical assessment of the measurement of market driving and factors influencing market-driving ability, which could be used as a basis for future research in the field.

7.4 MANAGERIAL IMPLICATIONS

Today's organisations need to find different ways to keep and attract new customers in a highly competitive market. Currently many organisations apply a market-driven approach, which starts with a careful assessment of customers' needs and developing services for a particular market (Kumar *et al*., 2000:129). However, in

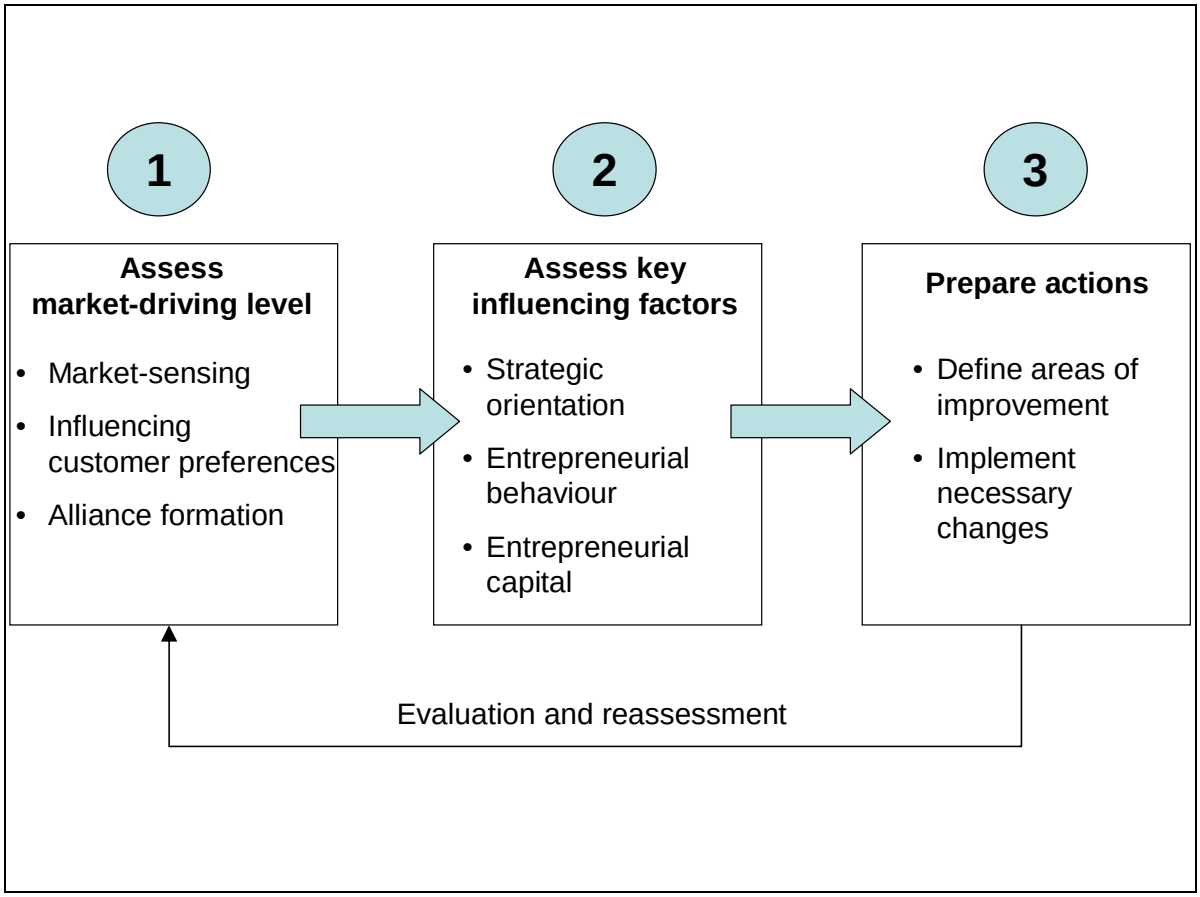
order to stand out in a highly competitive environment, firms need to take a different approach, which is described as market driving.

The focus of market driving lies in a comprehensive view of the market. Market-driving firms address all relevant stakeholders such as customers, suppliers and business partners. Furthermore, the market and entrepreneurial orientation that is demonstrated within the organisation tries to shape and change the behaviour of all stakeholders, which results in higher firm performance and relative competitive strength (Barlow Hills & Sarin, 2003; Harris & Cai, 2002; Jaworski *et al*., 2000; Kumar *et al*., 2000; Narver *et al.*, 2004; Schindehutte *et al*., 2008).

This study showed that a market-driving ability positively influences firm performance and relative competitive strength. In order to achieve these outcomes two main aspects of market-driving need to be addressed within organisations. First, specific activities that are related to market driving such as market sensing, influencing customer preferences and alliance formation activities need to be assessed. Organisations can determine their current level of engagement in these activities and identify areas for improvement. Second, in order to accelerate market-driving ability management needs to focus on key influencing factors such as strategic orientation, entrepreneurial behaviour and entrepreneurial capital. An assessment of the current level of market driving, together with an assessment of key influencing factors, could give managers a good picture of the current situation within the organisation and highlight areas for improvement.

The following figure summarises the three-step process that may be used to improve market-driving ability in organisations.

FIGURE 7.1: Accelerating market-driving ability in organisations



Source: Author's own compilation

This study identified three components of market driving, namely market sensing, influencing customer preferences and alliance formation. By identifying the current performance level in these three areas, managers can get an overview of their market-driving level.

Market-sensing activities consider approaches to assessing competitor strategies (e.g. market intelligence activities), evaluating changes in the regulatory environment (e.g. active involvement in industry associations) and investigating clients' opinions (e.g. interactive communication tools, market surveys). The combined information from these activities should be used to anticipate changes and identify measures that lead the organisation into a favourable position compared to its competitors.

Influencing customer preferences can be achieved by monitoring customer complaints (e.g. customer feedback systems), delivering exceptional and new services that are not expected by customers (e.g. home delivery of medication,

reminders for filing a new prescription) and educating customers about the development of new products (e.g. collaborating with patient associations).

Alliance formation activities refer to collaboration with other organisations in areas such as research and development or joint marketing campaigns. The success of these alliances can be assessed by analysing the impact on sales or customer loyalty. The success of future alliances can be improved by applying processes that help to select the right alliance partner (e.g. competitive intelligence about all possible partners, definition of selection criteria). Having strong alliance partners enables risk sharing, optimises the cost base and increases the chances of market power to control a particular part of the market, as described by Harris and Cai (2002:191).

In combination, market sensing, influencing customer preferences and alliance formation represent market driving within an organisation.

In a second step, managers can identify key influencing factors on market driving. This study found that three factors: strategic orientation, entrepreneurial behaviour and entrepreneurial capital, positively enhance an organisation's ability to become more market driving. It is crucial that all departments, functions and hierarchy levels be included in the process. This requires a commitment of top management to be willing to implement structures and processes that foster activities that improve market driving. The study showed that middle management in particular plays a crucial role in the organisation and can function as a moderator between the hierarchy levels.

The highest impact on market-driving ability is made by an organisation's *strategic orientation*. Strategic orientation in this study is characterised by the organisation's approach to information generation, information dissemination, interfunctional coordination and innovation. Managers need to develop a cohesive approach that accommodates all four aspects.
Information needs to be generated with all relevant stakeholders (e.g. customers, business partners). Once the relevant information has been consolidated it needs to be distributed via different communication channels (e.g. newsletters, meetings)

across functions and departments. Next, interfunctional coordination needs to take place. Different departments need to collaborate in order to develop a competitive edge. For that purpose managers should ensure that a common platform for information exchange is available (e.g. regular workshops between different departments, single IT system for the whole organisation).
The last aspect of a strategic orientation is innovation. Managers need to use the insights from various information channels that are put together in actionable steps by cross-functional teams to develop products and services that demonstrate a leap in customer value.

Combined, information generation, information dissemination, interfunctional coordination and innovation will increase an organisation's market-driving ability.

The second influencing factor on market-driving ability is *entrepreneurial behaviour*. Entrepreneurial behaviour includes proactiveness and responsiveness to information. Information that has been gathered in the organisation needs to be used in various ways. First, it should be used to formulate actions in response to competitors' moves or to clients' requests. Secondly, it should result in a development of new products and services that are introduced before the competition. This provides the advantage of being the first in a market and can hence also provide the opportunity to shape and influence the preferences of customers and other stakeholders.

The last factor influencing market-driving ability is *entrepreneurial capital*. This encompasses the organisation's financial, social and human capital.
In order to develop new products and services, management needs to be committed to making financial means available. A continuous plan of innovation activities throughout the years needs to be maintained to ensure funding of viable projects.
Human capital relates to employees' education, work experience and managerial expertise. In order to promote human capital managers can set up programmes to support managerial talent. The third aspect of entrepreneurial capital is social capital. Employees should be given time to participate in various types of networks (e.g. industry association meetings, social responsibility projects) which provide an opportunity to learn about developments in the environment that could potentially be

used to create new products and services or allow the organisation to enter new markets or shape the current market.

Although entrepreneurial capital was shown in this study to have a rather low impact on market-driving ability, it should not be neglected. Kumar *et al*. (2000) state that the success of market-driving organisations lies in the recruitment and selection of people who share the values of the organisation. Therefore, managers need to ensure that the mindset that is needed to support market driving is shared by all its employees across all levels and functions.

Managers of organisations could use the findings of this study in the three-step approach which was outlined in Figure 7.1. In a first step the current level of market driving, represented by the three activities of market sensing, influencing customer preferences and alliance formation, should be analysed. Based on this analysis, areas for improvement can be identified. For example, if the analysis shows that market-sensing activities are currently not conducted in the organisation, this would indicate a starting point for improvement. In a second step, managers would assess the organisation's performance in the three key influencing factors, namely strategic orientation, entrepreneurial behaviour and entrepreneurial capital. If the analysis identifies the fact that several aspects of strategic orientation are not considered (e.g. employees are not rewarded for innovation activities, information is not distributed to all departments, there are several IT systems in use) then in a third step priorities for improvement need to be set. Since activities that are summarised under strategic orientation were shown in this study to have the highest potential to increase market-driving ability, managers could start working on these aspects, followed by improvements relating to entrepreneurial behaviour and finally entrepreneurial capital issues.

To conclude the managerial implications of this study, it should be noted that market-driving activities are not fundamentally different from current activities that are performed within market-driven organisations. However, the key differentiating factor is that market-driving organisations use organisational capabilities in such a way as to anticipate and initiate changes in the market and its stakeholders (Harris & Cai, 2002:185) that result in higher firm performance and relative competitive strength.

7.5 LIMITATIONS OF THE STUDY

Since all research studies have limitations the reader is advised of the following methodological issues (Cooper & Schindler, 2008:585):

- The sampling used in this study followed a non-purposive, snowball sampling technique; which does not allow for an unrestricted generalisation of results.
- The study is cross-sectional. In order to support findings and show the impact of market-driving ability, especially on firm performance and relative competitive strength, a longitudinal study should be conducted.
- Market-driving was measured by market sensing, influencing customer preferences and alliance formation. As discussed in chapter three, these represent only a few concepts with which one could measure market driving.
- The presented firm-internal factors that influence market-driving ability were limited to four constructs.
- External influencing factors were excluded from the study.
- PLS path modelling calculates the latent variables as a linear combination of the observed variables (Henseler *et al*., 2009:297). This means that it is not possible to account for disturbance terms, so the latent variable is fully captured by its indicators - which might not be true (Diamantopoulos *et al.*, 2008:1215).
- The number of indicators on the first-order level is rather low. Ideally eight items should be used to form a scale (Carifio & Perla, 2007:108).
- The specified model for this study produced a coefficient of determination (R^2) of 0.612. As no similar studies could be found, this value cannot be compared within others in the field of research.

7.6 FUTURE RESEARCH RECOMMENDATIONS

Research regarding the measurement of market driving and factors influencing market-driving ability is only at the beginning. This study offers a starting point for future research in the field. The following recommendations can be made:

- Future research should consider measuring market driving with more, or other dimensions such as building supplier relationships (Ghauri *et al*., 2008), networking activities (Barlow Hills & Sarin, 2001, 2003), local sensitivity (Harris & Cai, 2002) and market control (Harris & Cai, 2002).
- Extended measures of the described constructs should be used. For example, corporate entrepreneurial management could also include the concept of rewards.
- Research could also investigate the impact of other firm-internal factors on market-driving ability, such as organisational culture, organisational learning capacity, opportunity recognition and whether organisations have an overall enabling environment for market driving.
- External developments and their impact on market-driving ability should be considered.
- Research could also investigate market driving with other stakeholders, for example consumers or suppliers.
- Future research could take advantage of a covariance-based structural equation approach, e.g. Lisrel, to measure market-driving ability.
- A longitudinal study approach would help to determine the impact of market-driving ability on firm performance and competitive strength.
- The measures of market driving and factors influencing market-driving ability could be investigated within other industries and countries.

7.7 SUMMARY AND CONCLUSION

The literature study outlined the research conducted at the interface of entrepreneurship and marketing. It has been noted that both disciplines share common concepts, such as the approach to innovation, focus on opportunities and change (Collinson & Shaw, 2001). It has also been noted that within the field of entrepreneurial marketing two approaches have emerged: a market-driven and a market-driving approach. Both approaches can appear in an organisation.

The research on market driving, its measurement and influencing factors, has been the focus of the empirical study. The findings of the research study showed that the model presented here can help firms to identify their level of market driving and also

determine the state of influencing factors in their organisation. Implications for business science and management have been discussed and limitations of the study have been addressed.

It is hoped that the findings of the study will provide an inspiration to other researchers to conduct further research in the field of entrepreneurial marketing and further investigate the construct of market driving and its implications for organisations.

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ANNEXURE A

Research questionnaire

Level of corporate entrepreneurship in the South African healthcare industry

Good morning / afternoon _____(insert name), my name is _____. I am a doctoral student at the University of Pretoria. I am conducting a survey amongst members of management in order to gain a general understanding of the level of entrepreneurship within the healthcare industry in South Africa. I would appreciate some of your valued time and input. The questionnaire will take approximately 20 minutes to complete.
All your answers are treated confidential and will only be evaluated on an aggregated basis.

S1) May I ask you a few questions to see if you qualify to take part?

Yes ..... ☐ (1) ☞ *go to S2)*

No ..... ☐ (2) ☞ *Terminate interview*

Cannot speak at the moment /
please call later ..... ☐ (3) ☞ *Make appointment*

S2) What is the main business focus of your firm?

Pharmaceuticals: Originals or Generics ..... ☐ (1) ☞ *go to S3)*

Medical Devices ..... ☐ (2) ☞ *go to S3)*

Pharmaceutical Distributor/Wholesaler ..... ☐ (3) ☞ *go to S3)*

Medical Scheme ..... ☐ (4) ☞ *go to S3)*

Other ..... ☐ (5) ☞ *Terminate interview*

S3) Which of the following describes the level of management you fall under?

Top Management, e.g. General Manager, Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Head Business Unit ..... ☐ (1) ☞ *go to S4)*

Middle Management, e.g. Senior Brand Manager, Business Director ..... ☐ (2) ☞ *go to S4)*

Junior Management, e.g. Brand Manager, Team Leader ..... ☐ (3) ☞ *go to S4)*

None of these ..... ☐ (4) ☞ *Terminate interview*

S4) Would you please tell me under which category your company falls under in terms of the number of employees nationally?

1-100 ..... ☐ (1) ☞ *Terminate interview*
101-200 ..... ☐ (2) ☞ *go to S5)*
201-300 ..... ☐ (3) ☞ *go to S5)*
301-400 ..... ☐ (4) ☞ *go to S5)*
401-500 ..... ☐ (5) ☞ *go to S5)*
501-1000 ..... ☐ (6) ☞ *go to S5)*
More than 1000 ..... ☐ (7) ☞ *go to S5)*

S5) Would you please tell me in which category your company's turnover falls under in terms of the last financial year?

Up to 50 million ..... ☐ (1) ☞ *Terminate interview*
50 – 100 million ..... ☐ (2) ☞ *go to 1a)*
101 – 150 million ..... ☐ (3) ☞ *go to 1a)*
151 – 200 million ..... ☐ (4) ☞ *go to 1a)*
201 – 250 million ..... ☐ (5) ☞ *go to 1a)*
More than 250 million ..... ☐ (6) ☞ *go to 1a)*

Please tell me in what way you agree with the following statements. On a scale of 1 to 5, where ***1=decreased significantly,*** **2**= decreased, **3**=remained the same, **4**= increased, ***5= increased significantly.***
Please note that for the following 3 questions, we are asking about your perceptions. Comparing your firm's performance for 2008 and 2009 please rate

	Decreased significantly (1)	(2)	(3)	(4)	Increased significantly (5)
1a)…the overall level of financial performance, e.g. company profit, net financial results.....	☐	☐	☐	☐	☐
1b)…the overall level of market share in %.....	☐	☐	☐	☐	☐
1c)…the overall development of cost base, e.g. production cost, operating expenses.....	☐	☐	☐	☐	☐

Please answer the questions according to your own personal judgement. The remainder of the questionnaire uses a scale of 1 to 5. Where **1** = **Strongly disagree**, **2**= Disagree, **3**= Neither agree nor disagree, **4**= Agree and **5** = **Strongly agree**. For each statement please tell me in what way you agree with the statement

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)

The next 4 questions will cover the **organisational structure** of your firm. Please tell me in what way you agree with the following statements.

At our firm …

1. …we have a flat organisational structure.....	☐	☐	☐	☐	☐
2. …we have many standard procedures that everyone must follow.....	☐	☐	☐	☐	☐
3. …we have open channels of communication	☐	☐	☐	☐	☐
4. …employees are free to take decisions within their scope of responsibilities	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)
Moving on to **management support** of your firm.					
5. Upper Management is aware and very receptive to employees' ideas and suggestions.....	☐	☐	☐	☐	☐
6. Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.....	☐	☐	☐	☐	☐
7. An employee with a good idea is often given free time to develop that idea	☐	☐	☐	☐	☐
8. Management provides a conducive environment for staff to communicate and understand each other	☐	☐	☐	☐	☐
Using the same 5 point scale, we'll now discuss your firm's approach to **risk-taking**					
9. We have a strong inclination / tendency to low risk projects, with normal and certain rates of return.....	☐	☐	☐	☐	☐
10. We would never pursue any projects that could potentially result in any kind of loss	☐	☐	☐	☐	☐
Thinking about your firm's **proactiveness**					
11. We try to anticipate developments in the market in order to adjust to changes quickly.....	☐	☐	☐	☐	☐
12. In dealing with our competitors we typically respond to actions which competitors initiate.....	☐	☐	☐	☐	☐
13. Compared to our competitors we are very seldom the first business to introduce new products or services.....	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)
The next section covers your firm's **responsiveness to the market**					
14. Usually we implement changes suggested by business partners	☐	☐	☐	☐	☐
15. We regularly analyse our relationships with business partners and respond quickly to major issues	☐	☐	☐	☐	☐
16. If we identify gaps in our product/service delivery we respond by taking appropriate actions	☐	☐	☐	☐	☐
The next 4 questions relate to your firm's approach to **information generation**					
17. We regularly meet with clients to learn how to serve them better	☐	☐	☐	☐	☐
18. We are slow to detect changes in our clients' product or service preferences	☐	☐	☐	☐	☐
19. Our firm does a lot of market research	☐	☐	☐	☐	☐
20. We spend a lot of time discussing clients' future needs with business partners	☐	☐	☐	☐	☐
Moving onto your firm's communication and **spreading of information**					
21. Management regularly communicates industry developments to staff	☐	☐	☐	☐	☐
22. We have regular meetings to discuss market trends and developments	☐	☐	☐	☐	☐
23. When one department finds out something important about competitors, it is slow to alert other departments	☐	☐	☐	☐	☐
24. Our firm regularly circulates reports or newsletters internally that provide information on our clients, competitors or the industry	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)
Talking about how your firm different **departments work together** Please tell me in what way you agree with the following statements.					
25. Information that is received from e.g. sales consultants is distributed within all relevant departments	☐	☐	☐	☐	☐
26. We share a lot of business information with different departments	☐	☐	☐	☐	☐
27. All departments work together in offering value to the client	☐	☐	☐	☐	☐
28. Different departments share resources, for example business systems with each other	☐	☐	☐	☐	☐
Thinking about your firm's **innovation intensity**					
29. We have a strong emphasis on research and development of new products/services	☐	☐	☐	☐	☐
30. In the past 5 years our firm has marketed plenty new products/services	☐	☐	☐	☐	☐
31. Changes in product or service offerings have been mostly of minor nature	☐	☐	☐	☐	☐
The following 3 questions relate to your firm's **entrepreneurial capital** On the same rating scale used before, please tell me in what way you agree with the following statements.					
Note: questions 32-34 deleted Thinking about your firm's **financial resources** 35. If we want to pursue an opportunity in the market we will make the financial means available	☐	☐	☐	☐	☐
36. There is a tight control on financial resources that are spent on product or service development	☐	☐	☐	☐	☐
37. There is always enough funding for marketing our products and services to the public	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)
The next section covers your personal **social skills**					
38. I feel comfortable working with people from diverse backgrounds	☐	☐	☐	☐	☐
39. I have strong connections to various different business networks	☐	☐	☐	☐	☐
40. I spend a significant amount of my time discussing business with external network partners	☐	☐	☐	☐	☐
Thinking about your firm's **human resources** On the same rating scale used before, please tell me in what way you agree with the following statements.					
41. For middle and higher management positions our firm would only consider candidates with university degrees	☐	☐	☐	☐	☐
42. Our middle and higher management consists of people from various knowledge backgrounds	☐	☐	☐	☐	☐
43. For middle and higher management positions our firm would only consider candidates with management experience	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)
Please tell me in what way you agree with the following 6 statements					
44. Firms that have a flexible organisation structure, a management that supports new ideas and takes a moderate amount of risk will be able to shape and change the market	☐	☐	☐	☐	☐
45. Having a flexible organisation structure, a management that supports new ideas and takes a moderate amount of risk will facilitate activities to create new clients preferences	☐	☐	☐	☐	☐
46. Firms that act proactively and respond to the market will be able to shape and change the market	☐	☐	☐	☐	☐
47. Being proactive and responsive to the market will allow a firm to sense the market for future developments	☐	☐	☐	☐	☐
48. Firms that collect information, distribute it within the organisation, align departments and show innovative behaviour will be able to shape and change the market	☐	☐	☐	☐	☐
49. Information generation, dissemination and alignment of departments as well as innovation are important in order to form alliances with business partners	☐	☐	☐	☐	☐

The next section covers your firm's ability to **influence clients preferences**
Please rate the extent of your activities towards an understanding of clients' needs.

50. We continuously monitor clients complaints about products or services that our firm offers	☐	☐	☐	☐	☐
51. We change clients preferences by offering products or services that have not been available before	☐	☐	☐	☐	☐
52. We constantly deliver exceptional products or services that outperform the products or services delivered by competitors	☐	☐	☐	☐	☐
53. We regularly inform our clients about our developments regarding new products or services, market trends etc	☐	☐	☐	☐	☐

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)

Now we'll discuss your firm's ability to **form alliances** with other firms
When answering the following questions please think of all forms of alliances that your firm has had in the past 4 years. Alliances refer to cooperative agreements where firms jointly work on product/service development, develop marketing strategies/activities etc.
On the same rating scale used before, please tell me in what way you agree with the following statements.

54. In the past 4 years we have had very few alliances with other firms.....	☐	☐	☐	☐	☐
55. The total number of alliances has increased in the past 4 years.....	☐	☐	☐	☐	☐
56. We have benefited a lot from our current and previous alliances to run our business successfully.....	☐	☐	☐	☐	☐
57. It is difficult to find the right alliance partners as we take a long time to develop mutual trust.....	☐	☐	☐	☐	☐
58. We have a process that allows us to evaluate alliance options and the benefits for our firm.....	☐	☐	☐	☐	☐

Please tell me in what way you agree with the following 2 statements.

59. A firm that actively shapes clients preferences, senses changes in the market and has reliable alliance partners will achieve superior performance.....	☐	☐	☐	☐	☐
60. A firm that actively shapes clients preferences, senses changes in the market and has reliable alliance partners will achieve a competitive advantage	☐	☐	☐	☐	☐

	Never used				Very frequently used
	(1)	(2)	(3)	(4)	(5)

Moving onto your firm's ability to **sense the market**
The rating scale is still 1-5, but now **1 = never used**, **2** =seldom used, **3** = neither never used nor very frequently used, **4** = frequently used and **5** = very frequently used.
Please rate the extent to which the following scanning devices are used by your firm to gather information about your business environment:

61. Regular evaluation of opinions from clients	☐	☐	☐	☐	☐
62. Explicit tracking of strategies and tactics of competitors	☐	☐	☐	☐	☐
63. Forecasting future sales.....	☐	☐	☐	☐	☐
64. Research on future challenges, for example government regulations	☐	☐	☐	☐	☐
65. Collecting information from business partners or associations	☐	☐	☐	☐	☐

	Very similar				Very different
	(1)	(2)	(3)	(4)	(5)

The next 5 questions relate to your firm's **relative competitive strength**
The rating scale is still 1-5, but now **1 = very similar**, **2** = similar, **3** = neither similar nor different, **4** = different **5 = very different**.

Relative to your major competitor please rate

66. … how well your products/services meet client's needs	☐	☐	☐	☐	☐
67. … the quality of handling client requests and queries	☐	☐	☐	☐	☐
68. … your firm's image.....	☐	☐	☐	☐	☐
69. … your firm's ability to gain market share.....	☐	☐	☐	☐	☐
70. … your firm's ability to transfer knowledge efficiently within the firm	☐	☐	☐	☐	☐

Demographic information

I. Gender ☐ male (1) ☐ female (2)

II. Name of company _____

III. *Became S3)*

IV. In which department do you currently work?

Finance ..... ☐ (1)
Human Resources (HR) ..... ☐ (2)
Information Technology (IT) ..... ☐ (3)
Legal ..... ☐ (4)
Marketing, Sales ..... ☐ (5)
Medical, Research & Development ..... ☐ (6)
Production ..... ☐ (7)
Other: please specify_____ ..... ☐ (99)

V. Can you please tell me your age range

21-30	31-40	41-50	51-60+
☐	☐	☐	☐
(1)	(2)	(3)	(4)

VI. How many years of experience you have in the healthcare environment?

Less than 1 year	1-3 years	4-6 years	7-9 years	more than 9 years
☐	☐	☐	☐	☐
(1)	(2)	(3)	(4)	(5)

VII. How many years have you been working in your present job?

Less than 1 year	1-3 years	4-6 years	7-9 years	more than 9 years
☐	☐	☐	☐	☐
(1)	(2)	(3)	(4)	(5)

Thank you very much for your participation.

ANNEXURE B

Original outer loadings for reflective indicators

	BE		SO				CA			CE			MD				
	PRO	RESP	GEN	DIS	COO	INN	FIN	HUM	SOC	RISK	MGT	STRU	ALL	SENS	CUST	PERF	COMP
Q11	0.9733																
Q12	-0.3959																
Q13	0.0081																
Q14		0.6048															
Q15		0.8705															
Q16		0.8308															
Q17			0.7683														
Q18			0.1428														
Q19			0.6911														
Q20			0.8128														
Q21				0.8626													
Q22				0.8904													
Q23				0.1895													
Q24				0.7352													
Q25					0.8093												
Q26					0.8926												
Q27					0.8296												
Q28					0.6927												
Q29						0.9635											
Q30						0.7249											
Q31						-0.1256											
Q35							0.8646										
Q36							-0.3941										
Q37							0.7198										
Q41								0.6056									
Q42								0.7416									
Q43								0.7157									
Q38									0.6611								
Q39									0.7941								
Q40									0.728								
Q9										0.7575							
Q10										0.9282							
Q5											0.8955						
Q6											0.8725						
Q7											0.8134						
Q8											0.8723						
Q1												0.1536					
Q2												-0.3989					
Q3												0.9292					
Q4												0.8766					
Q54													0.0575				
Q55													0.5686				
Q56													0.7447				
Q57													0.1633				
Q58													0.9128				
Q61														0.7545			
Q62														0.7916			
Q63														0.6198			
Q64														0.7396			
Q65														0.7919			
Q50															0.6985		
Q51															0.6659		
Q52															0.7483		
Q53															0.8504		
Q1A																0.7992	
Q1B																0.904	
Q1C																0.4629	
Q66																	0.7479
Q67																	0.8052
Q68																	0.8512
Q69																	0.8222
Q70																	0.7529

ANNEXURE C

Cross-loadings for first-order reflective concepts

	BE		SO				CA			CE			MD				
	PRO	RESP	GEN	DIS	COO	INN	FIN	HUM	SOC	RISK	MGT	STRU	ALL	SENS	CUST	PERF	COMP
Q11	0.975	0.549	0.413	0.361	0.433	0.346	0.236	0.172	0.273	-0.058	0.379	0.386	0.338	0.400	0.419	0.183	0.207
Q12	-0.396	-0.156	-0.230	-0.112	-0.058	-0.064	-0.190	-0.093	-0.108	0.149	-0.132	-0.129	-0.164	-0.207	-0.200	-0.155	-0.181
Q14	0.224	0.605	0.322	0.322	0.315	0.158	0.177	0.102	0.215	-0.154	0.304	0.309	0.268	0.277	0.278	0.137	0.161
Q15	0.471	0.871	0.454	0.459	0.418	0.289	0.244	0.278	0.357	-0.162	0.454	0.403	0.387	0.434	0.490	0.204	0.191
Q16	0.515	0.831	0.421	0.383	0.449	0.343	0.219	0.240	0.291	-0.129	0.436	0.420	0.331	0.368	0.467	0.206	0.175
Q17	0.367	0.421	0.768	0.485	0.468	0.287	0.266	0.133	0.254	-0.125	0.423	0.390	0.243	0.383	0.385	0.145	0.249
Q19	0.279	0.295	0.698	0.374	0.284	0.485	0.316	0.124	0.205	-0.131	0.316	0.212	0.279	0.454	0.373	0.076	0.200
Q20	0.341	0.441	0.815	0.521	0.417	0.339	0.295	0.106	0.328	-0.038	0.458	0.384	0.374	0.471	0.407	0.112	0.189
Q21	0.367	0.457	0.490	0.867	0.606	0.404	0.259	0.128	0.378	-0.064	0.611	0.546	0.345	0.466	0.507	0.168	0.202
Q22	0.309	0.462	0.597	0.896	0.582	0.435	0.359	0.137	0.345	-0.094	0.574	0.508	0.353	0.504	0.497	0.234	0.294
Q24	0.214	0.308	0.434	0.746	0.448	0.376	0.317	0.177	0.269	-0.087	0.432	0.376	0.325	0.421	0.445	0.155	0.140
Q25	0.315	0.388	0.448	0.537	0.812	0.329	0.281	0.179	0.249	-0.174	0.423	0.432	0.251	0.370	0.443	0.110	0.244
Q26	0.326	0.429	0.488	0.589	0.892	0.375	0.282	0.186	0.362	-0.096	0.490	0.468	0.254	0.410	0.404	0.120	0.228
Q27	0.411	0.492	0.447	0.515	0.826	0.333	0.282	0.125	0.294	-0.131	0.517	0.492	0.273	0.416	0.441	0.126	0.166
Q28	0.314	0.350	0.289	0.494	0.696	0.273	0.239	0.127	0.219	-0.073	0.457	0.492	0.298	0.316	0.370	0.148	0.165
Q29	0.299	0.331	0.456	0.484	0.409	0.979	0.364	0.165	0.239	-0.042	0.414	0.393	0.312	0.449	0.482	0.098	0.198
Q30	0.356	0.319	0.327	0.317	0.268	0.739	0.345	0.170	0.254	-0.017	0.324	0.247	0.384	0.395	0.415	0.135	0.215
Q35	0.245	0.249	0.333	0.345	0.321	0.342	0.889	0.224	0.189	-0.060	0.259	0.267	0.219	0.370	0.309	0.249	0.162
Q37	0.196	0.214	0.303	0.270	0.236	0.316	0.801	0.102	0.089	-0.113	0.177	0.183	0.180	0.375	0.411	0.114	0.233
Q41	-0.008	0.092	0.028	0.022	0.012	0.021	0.049	0.587	0.153	-0.111	-0.017	-0.043	0.204	-0.026	0.048	0.079	0.085
Q42	0.249	0.314	0.186	0.216	0.265	0.194	0.207	0.759	0.308	-0.068	0.244	0.300	0.291	0.265	0.264	0.197	0.052
Q43	0.064	0.119	0.070	0.053	0.051	0.116	0.121	0.706	0.097	-0.112	0.033	0.078	0.158	0.015	0.091	0.197	0.068
Q38	0.259	0.295	0.204	0.215	0.154	0.185	0.084	0.363	0.659	-0.016	0.212	0.202	0.254	0.193	0.233	0.088	0.036
Q39	0.197	0.290	0.256	0.334	0.334	0.178	0.128	0.145	0.795	0.007	0.254	0.153	0.197	0.301	0.224	0.176	0.166
Q40	0.151	0.234	0.305	0.326	0.288	0.211	0.164	0.124	0.730	-0.037	0.296	0.225	0.220	0.243	0.208	0.221	0.293
Q9	-0.019	-0.106	-0.053	-0.062	-0.074	-0.016	-0.074	-0.130	0.018	0.747	-0.062	-0.066	-0.089	-0.047	-0.132	-0.118	-0.088
Q10	-0.107	-0.188	-0.138	-0.094	-0.157	-0.043	-0.090	-0.107	-0.037	0.934	-0.094	-0.064	-0.086	-0.107	-0.128	-0.105	-0.086
Q5	0.291	0.429	0.433	0.561	0.508	0.323	0.196	0.148	0.326	-0.049	0.897	0.701	0.263	0.333	0.336	0.116	0.149
Q6	0.334	0.465	0.450	0.544	0.469	0.367	0.219	0.122	0.308	-0.043	0.877	0.630	0.318	0.350	0.367	0.172	0.204
Q7	0.325	0.414	0.479	0.516	0.475	0.405	0.261	0.135	0.284	-0.144	0.815	0.557	0.295	0.365	0.414	0.137	0.267
Q8	0.383	0.491	0.490	0.626	0.537	0.394	0.245	0.149	0.282	-0.103	0.866	0.656	0.356	0.382	0.492	0.105	0.107
Q3	0.387	0.481	0.435	0.554	0.551	0.375	0.242	0.201	0.250	-0.098	0.699	0.935	0.239	0.333	0.420	0.209	0.202
Q4	0.316	0.401	0.374	0.495	0.486	0.329	0.255	0.174	0.232	-0.029	0.649	0.886	0.218	0.276	0.337	0.151	0.139
Q55	0.210	0.241	0.202	0.199	0.212	0.188	0.172	0.141	0.154	0.061	0.199	0.162	0.576	0.235	0.168	0.129	0.028
Q56	0.197	0.266	0.268	0.271	0.210	0.231	0.208	0.227	0.236	0.000	0.228	0.192	0.752	0.354	0.242	0.185	0.043
Q58	0.360	0.419	0.374	0.394	0.312	0.349	0.196	0.318	0.284	-0.151	0.347	0.227	0.919	0.431	0.400	0.190	0.198
Q61	0.316	0.348	0.486	0.455	0.363	0.318	0.336	0.096	0.272	-0.076	0.321	0.229	0.285	0.751	0.449	0.167	0.189
Q62	0.324	0.330	0.502	0.437	0.413	0.342	0.384	0.103	0.286	-0.067	0.314	0.249	0.318	0.788	0.460	0.227	0.254
Q63	0.252	0.276	0.331	0.397	0.346	0.380	0.291	0.161	0.235	-0.071	0.321	0.303	0.253	0.624	0.340	0.177	0.111
Q64	0.301	0.340	0.358	0.342	0.278	0.369	0.319	0.144	0.217	-0.058	0.252	0.204	0.415	0.743	0.424	0.212	0.132
Q65	0.356	0.428	0.416	0.450	0.365	0.368	0.303	0.120	0.257	-0.099	0.347	0.300	0.414	0.792	0.452	0.226	0.271
Q50	0.257	0.406	0.337	0.397	0.399	0.326	0.199	0.225	0.239	-0.107	0.308	0.247	0.328	0.406	0.705	0.056	0.184
Q51	0.272	0.332	0.345	0.374	0.281	0.389	0.350	0.082	0.250	-0.116	0.302	0.214	0.187	0.364	0.657	0.124	0.252
Q52	0.366	0.408	0.379	0.371	0.377	0.400	0.324	0.158	0.190	-0.131	0.408	0.355	0.264	0.410	0.746	0.201	0.297
Q53	0.390	0.464	0.442	0.530	0.433	0.410	0.374	0.180	0.242	-0.104	0.372	0.399	0.354	0.510	0.851	0.225	0.244
Q1A	0.165	0.207	0.125	0.177	0.132	0.096	0.141	0.222	0.203	-0.107	0.123	0.183	0.222	0.178	0.139	0.833	0.012
Q1B	0.194	0.213	0.140	0.216	0.135	0.106	0.239	0.202	0.189	-0.115	0.138	0.173	0.172	0.287	0.219	0.919	0.158
Q66	0.196	0.111	0.165	0.143	0.147	0.193	0.191	0.132	0.136	-0.063	0.116	0.071	0.150	0.174	0.214	0.079	0.747
Q67	0.193	0.234	0.223	0.167	0.163	0.146	0.102	0.082	0.160	-0.144	0.153	0.151	0.107	0.209	0.252	0.068	0.805
Q68	0.195	0.198	0.263	0.268	0.263	0.175	0.204	0.088	0.204	-0.069	0.199	0.178	0.130	0.242	0.318	0.120	0.852
Q69	0.144	0.159	0.240	0.242	0.198	0.189	0.205	0.083	0.214	-0.043	0.124	0.142	0.137	0.238	0.234	0.119	0.823
Q70	0.214	0.181	0.217	0.226	0.214	0.172	0.201	-0.014	0.164	-0.086	0.202	0.215	0.117	0.181	0.243	0.042	0.752