

**MEASURING ENTREPRENEURIAL INTENSITY IN THE
AUTOMOTIVE INDUSTRY IN THE GAUTENG PROVINCE**

**By
BONGANI NGOMANE**

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for the degree of Master of Entrepreneurship and New Venture
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DEDICATION

This research is dedicated to all my countrymen, who fought and died for the freedom of South Africa, and Africa, that we all enjoy today.

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A special thanks to my staff that supported me with my studies, to the Department of Social Development for paying all my fees and the provision of a progressive work environment for me to continue my studies. To all the staff of Wits Business School, especially Meisie Moya, Lindi Mataboga and Sindiswa Nombodi. To my supervisor, Prof Urban Boris, for his tough, uncompromising guidance. To my special wife for inspiring and supporting me through all my studies.

To the Father, the Son and the Holy Spirit for protection and blessings in life. Blessed be the name of the Lord of Israel, our Father, who rules for ever.

DECLARATION

I, Bongani Ngomane, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Entrepreneurship and New Venture Creation in the University of the Witwatersrand, Business School Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

(Bongani Ngomane)

Signed at

On the Day of 2016

ABSTRACT

This study is based on the investigation of the level at which the entrepreneurial dimensions are prevalent and are practised in the automotive industry in the Gauteng province. The entrepreneurial grid was used as a point of reference, to determine the level of entrepreneurial intensity by reflecting on frequency and degree of entrepreneurship in the automotive sector.

The sample focused on the entrepreneurial intensity sectors of the industry, such as original equipment manufacturing, automotive components manufacture, sales, after sales, statutory bodies, based in the Johannesburg, Tshwane and Ekurhuleni regions of the province, entrepreneurs in the automotive sector. A quantitative study was used as the researcher was measuring entrepreneurship and also conducting tests on the interplay that exists between the different dimensions of entrepreneurial intensity in terms of how they influence each other.

The results of the study found that entrepreneurial intensity is prevalent in the sector and its components of innovation, risk taking and proactiveness are practised. However, there are other key elements, such as the degree and frequency of entrepreneurial activities that could enhance entrepreneurial intensity on which firms in the automotive industry are currently performing poorly and would still need to put in place.

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LIST OF ACRONYMS

ACRONYMS	MEANING
AIDC	Automotive Industry Development Centre
AIEC	Automotive Industry Export Council
APDP	Automotive Production Development Programme
ASP	Automotive Supplier Park
EH	Environmental Hostility
EI	Entrepreneurial Intensity
EII	Entrepreneurial Intensity – Innovation
EIP	Entrepreneurial Intensity – Proactiveness
EIRT	Entrepreneurial Intensity – Risk Taking
EO	Entrepreneurial Orientation
GDP	Gross Development Product
GEM	Global Entrepreneurship Monitor
ISI	Import Substitution Industrialisation
MIDP	Motor Industry Development Programmes
NAAMSA	National Association of Automobile Manufactures of South Africa
NIPP	National Industrial Participation Product
SAAW	South African Automotive Week
WBS	World Business Satellite

1 CHAPTER 1: INTRODUCTION

1.1 Introduction

The purpose of the study was to measure entrepreneurial intensity in the automotive industry in Gauteng. The study focused on examining the existence and extent of entrepreneurial intensity in the automotive industry in the Gauteng Province.

Entrepreneurial intensity is the level of entrepreneurship in an organisation, firm, industry or economy. It is the frequency and degree of entrepreneurial activity (Morris, Kuratko & Covin, 2011) that exists in an organisation. An entrepreneurial grid or matrix is used to explain the frequency of entrepreneurial activity or events in an organisation; whereas an entrepreneurial degree determines the level of innovation, risk taking and proactiveness in an organisation (Morris, Kuratko, & Covin, 2011). This can be understood within the context of corporate entrepreneurship; hence the combination of the two resulting in the term corporate entrepreneurial intensity (Thoumrungrroje, 2003). Corporate entrepreneurship is a process which describes a company's activities in areas of innovation, risk taking and proactive manner (Zahra (1993) as cited in Scheepers, Hough & Bloom, 2007). These three areas of corporate entrepreneurship define the entrepreneurial intensity of a firm.

Morris and Sexton (1996) add entrepreneurial frequency and degree on the definition of corporate entrepreneurship, leading to entrepreneurial intensity (Scheepers, Hough & Bloom, 2007). Entrepreneurial intensity, as mentioned earlier, measures or determines entrepreneurial activity or an event in a firm, sector or industry. The nature of entrepreneurial intensity is that it can also be learned within corporate entrepreneurship, as entrepreneurial intensity in the automotive industry takes place in a firm, which is a corporate environment; this research would then form part of the corporate entrepreneurship field of study.

In this introductory chapter of the report, the researcher discusses the context of the study and the problem statement that gives a justification to why the study was necessary. The goals and objectives of the study are outlined together with the rationale for the study. This is followed by definitions of the key concepts related to the studies which are expanded on in greater detail in chapter two, together with a review of literature relevant to the study.

1.2 Context of the study

The study's interest was in the Gauteng province and it was influenced by the scope and magnitude of the automotive industry in the province. The province plays host to multi-national corporations in the automotive industry, including companies such as Nissan/Renault SA, BMW and Ford Motors. In 2009, 40% of all light vehicles manufactured in South Africa came from the Gauteng province. The province also hosts 164 automotive components manufacturers (Nair, 2011). The Automotive Supplier Park (ASP), which groups all automotive assemblers, component manufacturers and material suppliers, is also found in Gauteng. The province has an Automotive Industry Development Centre (AIDC), which is aimed at offering world class services for automotive design and testing, automotive research and development and human resource development. The Centre also delivers support services to the industry to improve their productivity and attractiveness in the international market place. The critical focus areas are skills development, supplier development and logistics development.

Gauteng (particularly in Rosslyn, Silverton and Ekurhuleni), produces 40% of the total number of cars produced in South Africa, making it the largest producer of cars in the country and the biggest activity of automotive industry in Southern Africa (Barnes 2008). As Gauteng is part of South Africa, the context of the study also extends to cover the whole of South Africa, to ensure an understanding of where the Gauteng automotive industry originates.

1.3 Problem statement

The Gauteng automotive industry is an important factor in the economy of South Africa. The industry contributes more than a billion rand to the economy of the country, with 35% on original equipment manufacturer, 45% export and 20% aftermarket and currently employs more than 200,000 people (Pitot, 2011). However, the sector is faced with serious competition from other countries, such as Japan, United States of America, China and Germany. Most researchers argue that entrepreneurial intensity is pivotal to economic growth and development, meaning that countries or economies with high entrepreneurial intensity perform well in the economy (Haohan, 2009).

Despite the important role of the automotive industry in the economy of Gauteng and South Africa as a whole, there is not much evidence in literature about the entrepreneurial intensity of the province's automotive industry. This problem makes it necessary for entrepreneurial scholars to investigate this field to determine the level of entrepreneurial intensity in the automotive industry in Gauteng, especially given the fact that the Gauteng province is the economic hub of South Africa with the largest concentration of automotive industry in South Africa.

1.4 Goal and objectives

1.4.1 Goal of the study

- To measure entrepreneurial intensity in the automotive industry in the Gauteng province.

1.4.2 Objectives of the study

- To determine if there is a significant relationship between entrepreneurial orientation and entrepreneurial frequency

- To determine if there is a relationship between environmental hostility and entrepreneurial intensity.
- To determine if there is a significant relationship between entrepreneurial intensity and entrepreneurial orientation
- To provide recommendations on entrepreneurial intensity to the Gauteng automotive industry in accordance to the findings of the study.

1.5 Significance of the study

The study fills a gap in the body of knowledge in that there is not much evidence in literature about the entrepreneurial intensity of the automotive industry in the Gauteng province. The study therefore contributes much valuable information to what is currently known about entrepreneurial intensity to the current industry players and the entrepreneurs who want to be players in the industry and most of all, to the researchers who are interested in the automotive industry.

1.6 Definition of terms

There are key concepts that have been used which are necessary at this stage to define to ensure understanding from the perspective of the study.

• Entrepreneurship

The term entrepreneurship was first used in the works of Irish economist, Cantillon. To him, entrepreneurship was self-employment with the intention to take risk and to gain profit (Bruyat & Julien, 2000). Since then, the definition of entrepreneurship has evolved. Bateman and Snell, cited in Venter, Urban and Rwingema (2013) define entrepreneurship as an ability to start an organisation of significance. Also, Dollinger, cited in Venter et al., (2013) defines entrepreneurship as the establishment of an innovative, economic organisation for profiting under risky conditions. However, the most common way to define entrepreneurship has been to define it on “what he does” and not “who he is” (Sharma & Chrisman 1999, p. 12). Many scholars, such as

Mill (1870), Say (1857), Knight (1921), Schumpeter (1934), Kirzner (1973, 1997), Baumol (1990, 2002) are among the most significant scholars who have contributed on the definition clarification of entrepreneurial behaviour (Minniti et al., 2008, p. 603).

- **Entrepreneurial Intensity**

According to Morris and Sexton (1996), entrepreneurial intensity consists of two components which are entrepreneurial degree and entrepreneurial frequency (Scheepers & Hough, 2006). This means that entrepreneurial intensity involves process, time and activity or event. This demonstrates a relationship between corporate entrepreneurship, entrepreneurial intensity and entrepreneurial orientation. Many scholars have shown a relationship between the three factors; entrepreneurial orientation and entrepreneurial intensity and corporate entrepreneurship (Zahra & Covin, 1995; Wiklund, 1999; Covin & Miles, 1999; Goosen, DeConing, & Smit, 2002). Below terms/concepts which are pivotal in the research are defined.

- **Automotive Industry**

The automotive industry is described by Drucker (1946) as 'the industry of industries'. Other scholars, such as Womack et al. (1990); Barners (2008); Sturgeon and Florida (2000) also used the same phrase for automotive industry. These scholars used this phrase to describe the automotive industry, in that through the industry many other industries are founded and sustained, i.e. insurance, glass, tyre, filling stations, steel, paint and oil industries. All of these industries are heavily founded and reliant on the automotive industry. For the purposes of this research, the automotive industry is defined as the industry which manufactures cars, parts of cars and which sells cars.

- **Automotive Firms**

In the context of this study, automotive firms refer to different business units in the industry, such as car dealerships, manufacturing firms and auto service centres.

1.7 Assumptions

The study makes the following assumption:

- That entrepreneurial intensity in the automotive industry can be measured by focusing on the entrepreneurial dimensions, as identified by various authors (Miller 1993; Covin & Covin 1990; Dean 1993), which are innovation, proactiveness, aggressiveness, autonomy and risk taking.

1.8 Conclusion

The above confirms the view that, we are in a period where the only survival in the economies of the world is through business unusual or creative disruptiveness and the lower you are in that scale the worse it will be, for any country (Hendler, Holiday, Ratcliffe, & Wakeford, 2007). This statement also applies to the Gauteng automotive industry, in that if the province and her entrepreneurs fail to sharpen its entrepreneurial intensity, Gauteng may find itself at the bottom of the scale, sinking deeper into a vicious economic cycle.

2 CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Literature review is critical in any research field; other scholars refer to it as a theory of the research. It offers context of the research, justifies the study, reflects where the research fits in the body of knowledge and enables the researcher to learn from other works (Boote & Beile 2005). This chapter presents the literature on entrepreneurial intensity and the automotive industry in South Africa with specific emphases on the Gauteng province. This review assists in responding to problem statement and the questions asked in this research; this is done through reviewing of articles, books and analysing different scholarly paradigms in the field of entrepreneurship.

Definition of key important terms in the study is presented first, followed by discussions on the five different dimensions of entrepreneurial intensity, reflecting on the automotive industry, and then a conclusion is provided.

2.2 Conceptual Development of Entrepreneurial Intensity

2.2.1 Entrepreneurial Intensity

It is critical to first define entrepreneurship and corporate entrepreneurship before defining entrepreneurial intensity, as entrepreneurial intensity is a direct product of the two mentioned terms. There have been many definitions of what is entrepreneurship, leading to many interpretations of entrepreneurship definitions (Kurakto, Hurley & Hornsby, 2001). Davidson argues that there is a lack of agreement on the definition of Entrepreneurship (Peverelli & Song, 2012). In defining entrepreneurship there have been different approaches to it, some scholars defined it according to its character and outcomes (Shane & Venkataraman 2000).

Corporate entrepreneurship is the development of a business idea in a firm (Birkinshaw, 2003). The different terms have been used by different scholars to describe corporate entrepreneurship, scholars such as Von Hippel (1977; Altman and Zacharakis (2003) have used corporate venturing; Pinchot, (1985; Antoncic and Hisrich (2001); Goosen (2002), have used intrapreneuring; Burgelman (1984) has used internal corporate entrepreneurship (Vesper, 1984); and venturing has been used by Hornsby, Naffziger, Kuratko and Montagno (1993); Scheepers, Hough and Bloom (2007).

Table 2.1 shows how the different terms have been used to define corporate entrepreneurship and how they are sometimes used interchangeably.

Table 2.1: Corporate entrepreneurship versus entrepreneurship

CORPORATE ENTREPRENEURSHIP Burgelman (1983): corporate entrepreneurship refers to the process whereby firms engage in diversification through internal development. Vesper (1984): corporate entrepreneurship involves employee initiative from below in the organisation to undertake something new. Jennings and Lumpkin (1989): corporate entrepreneurship is defined as the extent to which new products and/or new markets are developed.
INTRAPRENEURSHIP Pinchot (1985): Entrepreneurs are any of those who take hands-on responsibility for creating innovation of any kind within an organisation. They may be the creators or inventors but are always the dreamers who figure out how to turn an idea into a profitable reality (p. ix). Nielson, Peters, and Hisrich (1985): Entrepreneurship is the development within a large organization of internal markets and relatively small and independent units

designed to create, internally test-market, and expand improved and/or innovative staff services, technologies or methods within the organization. This is different from the large organization entrepreneurship/venture units whose purpose is to develop profitable positions in external markets (p. 181).

Source: Scheeper (2007)

According to Morris and Sexton (1996), entrepreneurial intensity consists of two components, that of entrepreneurial degree and frequency (Scheepers & Hough 2006). This means that entrepreneurial intensity involves process, time and activity or event.

The above demonstrates a relationship between corporate entrepreneur, entrepreneurial intensity and entrepreneurial orientation. Common is an enterprise or a firm, or an organisation.

2.2.2 Corporate Entrepreneurship Context

Entrepreneurial intensity can be studied through a corporate entrepreneurship context. Corporate entrepreneurship has four types. These four types of corporate entrepreneurship are sustained regeneration, organisational rejuvenation, strategic renewal and domain redefinition (Dess, Ireland, Zahra, Floyd, Janney, & Lane 2003). These four types of corporate entrepreneurship can be interpreted with five dimensions of entrepreneurial orientation. We can therefore relate corporate entrepreneurship to rejuvenation when reflecting on risk taking; and we can relate it to strategic renewal when reflecting on reactivity; adjust the main redefinition when reflecting on comparative aggressiveness and on sustained regeneration when dealing with autonomy and Innovation

The above is in line with Morris and Sexton (1996)'s analysis of entrepreneurial intensity in a corporate context. However, it should be noted that entrepreneurial

intensity can be studied in various frameworks, such as start-up firms, growing independent businesses, multinationals and non-profit organisations (Erasmus & Scheepers, 2008). According to Rutherford and Holt (2004), there are three main variables that can be used to interpret corporate entrepreneurship, which are context, process and individuals. These variables are therefore applicable to measuring entrepreneurial intensity in the automotive industry as cited earlier that the study is conducted within the context of corporate entrepreneurship due to the fact that the firm and industry makes up part of corporate entrepreneurship. The variable of process refers to how corporate entrepreneurship is facilitated by leaders, including the specific strategies leaders use to encourage entrepreneurial behaviours. The context variables address the environments that define the organisation as it embarks on calculated plans to implement entrepreneurship (Rutherford & Holt, 2004).

The environment can be macro or micro (Berreira, Dhliwayo, Luiz, Naude, & Urban, 2008). The variable of Individual is about the people involved in entrepreneurial activities, describing their general disposition, skills, abilities, and attitudes (Rutherford & Holt, 2004). The entrepreneurial process is important, the individual remains first to consider entrepreneurship or to implement it, the context or environment the second and the process the third (Venter, Urban & Rwigema 2008). The above three variables can be used to determine the entrepreneurial intensity of the firm and even the firm's view of its own entrepreneurial degree and frequency.

2.2.3 Entrepreneurial intensity and Value Creation

Entrepreneurial intensity can be looked at through the value that the company creates. We consider value creation to be linked to the firm's performance. Since the existence of any firm is to create value, its performance should be considered by the value it creates (Monks & Minnow, 2001). The value that the Gauteng province automotive industry creates is very important in the economy of South Africa, in the form of job creation and economic development. Brush and Vanderwerf (1992) found

that determinants of firm performance are job creation and sales growth (Loss & Coulthard, 2005). Companies that create positive economic value have higher entrepreneurial intensity and those that create negative or no value at all have low entrepreneurial intensity (Erasmus & Scheepers 2008). High value creation is linked to entrepreneurial intensity as it reflects on one or more dimensions of entrepreneurship, especially opportunity seeking and risk taking.

There is a general agreement among scholars in that entrepreneurial activity in a firm leads to high value creation (Lumpkin & Dess, 1996). Based on a number of studies conducted by scholars such as Morris and Sexton (1996); Kuratko et al. (2007); Scheepers et al. (2007), it is justifiable to study entrepreneurial intensity from a value creation or performance aspect. However, Wiklund (1999) and Covin and Slevin (1991) argue that entrepreneurial orientation is not adequate in studying value creation or the performance of firms (Loss & Coulthard, 2005). This argument, by implication, affects entrepreneurial intensity as it is part of entrepreneurial orientation, only separated by frequency and degree. The above demonstrates that entrepreneurial intensity and entrepreneurial orientation can be studied within the context of corporate entrepreneurship, making corporate entrepreneurship theory key in understanding and researching entrepreneurial intensity.

2.2.4 Theoretical Background of Entrepreneurial Intensity

The research is mainly focused on measuring the entrepreneurial intensity in the automotive industry. According to Barringer and Bluedorn (1999); Krentreiser, Marino and Weaver (2002), measuring entrepreneurship, can be done through entrepreneurial orientation (Scheeper, Hough & Bloom, 2007). Entrepreneurial orientation is composed of risk-taking, proactiveness and innovation (Scheeper, Hough & Bloom, 2007). Other scholars such as Morris and Sexton (1996) considered 'entrepreneurial orientation' from the frequency and degree approach and called this entrepreneurial intensity (Kuratko, Morris & Covin, 2011).

It can therefore be argued that the main difference between entrepreneurial orientation and entrepreneurial intensity is the element of frequency and degree,

which Morris and Sexton (1996) have represented through five categories as represented below in figure 2.1.

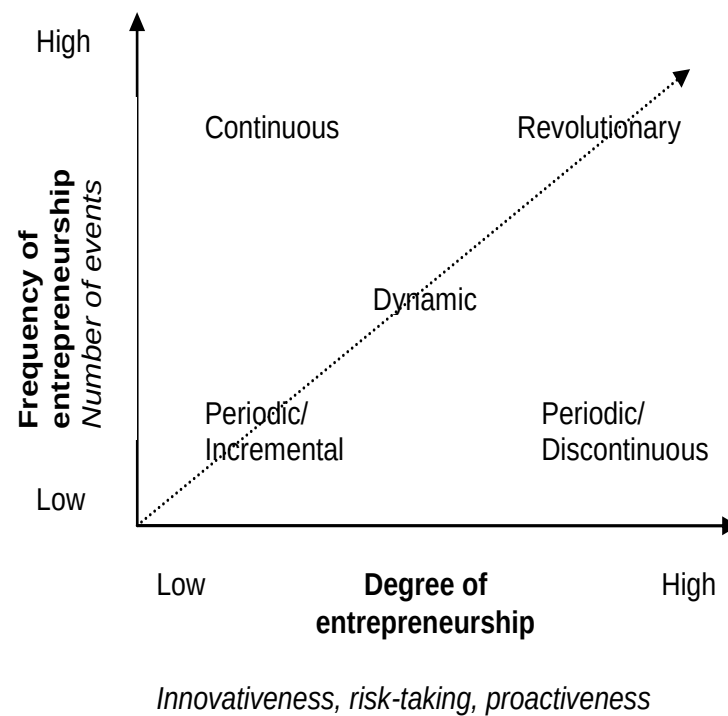


Figure 2.1: Entrepreneurial Grid

Source: Morris and Kuratko, 2002:48

Figure 2.1 presents an entrepreneurial grid, enabling the firms to be placed in a certain category of five as depicted in the graph above. The graph can be interpreted in the following way:

- The Periodic/Incremental category represents low levels of entrepreneurial intensity. Firms that are represented by this category produce few entrepreneurial activities, which are only low in innovation, risk or proactivity.
- The Revolutionary category is where frequent entrepreneurial activities are greatly innovative, risky or proactive. Thus, firms that are in this category of the grid reflect the highest levels of entrepreneurial intensity (Morris & Kuratko, 2002).

- Firms that improve their products and services are Continuous/Incremental category.
- Firms that are tremendously “entrepreneurial” would be in the Periodic/Discontinuous category. i.e. movie industry
- The Dynamic category on the grid represents firms that are considered to be highly innovative in the markets (Scheepers 2007).

The above demonstrates that there is a level of entrepreneurship in every firm. However, the problem is to determine how entrepreneurial a given firm is at a certain point in time (Scheepers 2007). Morris and Kuratko (2002) argue that more entrepreneurship is not always profitable. The argument is based on that there are norms and standards for entrepreneurial intensity in every industry and these norms suggest that there is no “best place to be in the entrepreneurial grid” (Scheepers 2007, p. 87). Morris and Kuratko (2002) further argue that companies’ entrepreneurial intensity could also differ significantly between divisions, units, departments and geographical areas within the same enterprise (Scheepers 2007). This is because entrepreneurship is dependent on the nature of work in a particular unit and the management of that unit or department. Through the entrepreneurial grid, we are able to interpret the level of entrepreneurship in a firm, below we reflect on the meaning of the grid.

2.2.5 Entrepreneurial Grid Approach

It should be noted that studying entrepreneurial intensity through the grid is not considered a theoretical approach, but rather a method that can be applied to interpret entrepreneurial intensity. The industry can be put in a grid according to its frequency or degree of entrepreneurship. The grid has five levels which are periodic/incremental, continuous/incremental, periodic/discontinuous, dynamic and revolutionary. Industries with many entrepreneurial activities that are innovative, risky and proactive will be placed on the grid as revolutionary and those with few entrepreneurial activities and low on innovativeness, risk-taking and proactiveness will be placed on the periodic/incremental level of the grid (Heilbrunn 2008). Some

people may argue that to be revolutionary on the grid is a sign of being entrepreneurial, however, the advantage on the grid depends on the type of industry and the period in the economy, meaning that there is no best place in the grid but it all depends on the prevailing conditions of the industry (Morris et al., 2008).

We therefore argue that researching or studying entrepreneurial intensity through degree and frequency in accordance with Morris and Sexton (1996) fits well with a Lewinian-based approach, that of scaling the individuals, firm and the system (Berreira et al., 2012).

2.2.6 Human capital approach

The human capital theorist submits that, human development, in the form of education, knowledge and skills, enables entrepreneurs with intellectual abilities, resulting in high entrepreneurial activity (Schultz, 1959; Becker, 1964; Mincer, cited in Urban, Barreira, Botha, & Oosthuizen, 2013). In reflecting on human capital, it becomes pivotal to consider the so called big five. The big five makes us understand the individual entrepreneurial motivation, in respect of need for achievement, need for autonomy, locus of control, risk taking and self-efficacy (Shane et al., cited in Urban et al., 2013). In applying the big five, we are able to understand what drives entrepreneurship in a certain industry.

Herron and Sapienza (1992) argue that the individual is the most critical unit of inquiry in entrepreneurial studies, since it is the individual that starts new businesses. Stevenson (1990) argues that research on individual entrepreneurship is largely inconclusive; however, there remains an interest in researching entrepreneurship from an individual's approach (Rutherford & Holt, 2004). Studying entrepreneurial intensity from an individual approach is based on three variables, which are process, context, and individual variables (Rutherford & Holt 2004).

- A process variable refers to how corporate entrepreneurship is encouraged by leaders in a firm.

Shane (1996) argues that this approach is flawed as it looks at an individual outside of a firm context. Studies that have researched the impact of human capital on a firm have found that education in certain fields such as law, engineering and science does not lead to superior entrepreneurial performance (Zarutskies, cited in Urban et al., 2013). Human capital is also general and specific. General human capital is overall education, and specific is about experience (Urban et al., 2013).

2.2.7 Entrepreneurial Management Approach

According to Morris and Kuratko (2002); Hornsby et al. (2002), firms' internal and external context influence the corporate entrepreneurship dimensions, especially innovativeness, risk-taking and proactiveness. Managers' insights of the internal and external environment in which they function influence the entrepreneurial and strategic direction of the firm (Scheepers 2008). The manager is a key link between his firm and the outside world; he therefore needs to channel the firm's entrepreneurial spirit in a way that would add value to the company and the market. Hornsby et al. (2002) focused on the management role of intensifying corporate entrepreneurship in a firm. He identified five factors, namely, management support for corporate entrepreneurship, autonomous employees, the use of appropriate rewards for corporate entrepreneurship, the availability of resources, especially time, and a supportive organisational structure.

It is the management role to ensure the above are available in a firm to advance the culture of entrepreneurship. Arshi (2012) developed what he calls entrepreneurial architecture, which comprises internal and external networks (resembling personal networks developed by entrepreneurs through social capital). Internal networks are built within the organisation, while external networks are built with external stakeholders. According to this approach, management is key in ensuring that the firm's internal environment supports a culture that is entrepreneurial. It therefore becomes the role of the manager, or entrepreneur to ensure that the above happens in a firm. The manager has a critical role to ensure that entrepreneurship in a firm is encouraged and blockages are removed through making resources

available, encouraging risk, innovation and a proactive culture in an organisation (Machet 1999). Figure 2.3 demonstrates the relationship between management and entrepreneurial intensity.

2.3 Summary

Entrepreneurial intensity can be understood from different entrepreneurial theories, depending from what perspective one studies it. Hebert and Link (1998) have made an extensive study in the field of entrepreneurial theories, and found that there are 12 approaches to the study of entrepreneurship (Philipsen, 2011). Entrepreneurship is therefore a complex field of study, as there are many perspectives from which it can be studied. Drucker (1995) argues that entrepreneurship must not be made a complex field of study but rather should remain a simple one (Philipsen, 2011).

In using the approach of Stevenson and Sahlman (1987), the research considers entrepreneurship from the three approaches cited above: entrepreneurship as a grid factor, as a management factor and as a Human capital factor. It will be limiting to study entrepreneurship from a single approach or theory, as there is always an overlap of approaches i.e. studying corporate entrepreneurship, without looking at the individual entrepreneur in the firm or looking at behaviour of the entrepreneur without looking at the market and culture that shapes a particular behaviour of an entrepreneur. Hence integration of theories, approaches and dimensions of entrepreneurship should be considered.

Based on the above, it is argued that all different entrepreneurial theories/approaches should be integrated and an attempt to disaggregate them, is limiting to the understanding of entrepreneurship, therefore in this research the use of Morris, Michael, Sexton, Lewis and Donald (1994)'s integrative approach (Saat 2012) is adopted. Figure 2.3 explains integrative approach (Saat, 2012).

An Integrative Model of Entrepreneurial Inputs and Outcomes

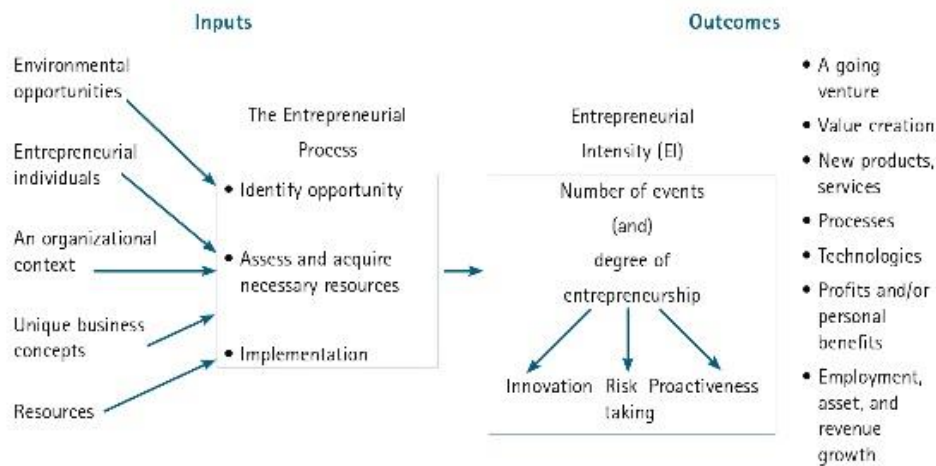


Figure 2.3: An integrated model of entrepreneurial inputs and outcomes

Source: Morris, Lewis and Sexton (1994, p. 21)

2.4 The paradox of Entrepreneurial Intensity and entrepreneurial Orientation

2.4.1 Entrepreneurial Orientation in Context

Corporate entrepreneurship has two key important features that can be used in determining its presence and its effect in a particular firm that is entrepreneurial orientation and entrepreneurial intensity. According to Morris, Lewis and Sexton (2001) corporate entrepreneurship has attitudinal and behavioural aspects. Attitudinal refers to the proactiveness of the individuals or the firm to embrace newness or change. This is referred to as entrepreneurial orientation. The behavioural aspect refers to the ability of the individuals or the firm to conceptualise the idea, develop it and harvest it (Morris, Lewis & Sexton, 2001). The assumption

can be drawn that the entrepreneurial intensity dimensions can be part of the attitudinal and behavioural aspects.

Entrepreneurial orientation has dimensions which can be explained by the definition of version (1983) of an entrepreneurial firm; he submits that an entrepreneurial firm is one that is innovative, proactive and takes risk, thus hitting competitor's hard (Lumpkin & Dess 1996).

There has since been an addition to the three entrepreneurial orientation dimensions by Lumpkin and Dess (1996); they have since added aggressive competitiveness and autonomy on the definition of Miller (1983), making the entrepreneurial orientation has five dimensions, in accordance with the entrepreneurial orientation framework, as discussed earlier. Naldi et al. (2007) argue that entrepreneurial orientation is sometimes analysed as a one-dimensional construct rather than as a multidimensional construct, however entrepreneurial orientation may better be viewed as a multidimensional construct (Callaghan, 2009; 31). Naldi et al's argument justifies the usage of three or more dimensions of entrepreneurial orientation, in research work.

According to many scholars, such as Hamel (2000), Wiklund and Shepherd (2005) and Zahra (1991), the higher entrepreneurial orientation in a firm is associated with positive results in the firms' performance and high profit (Wang, 2008).

Entrepreneurial intensity is one side of the coin of entrepreneurial orientation, as its core construct is from that of entrepreneurial orientation. The key difference between the concepts is that of frequency and degree, as developed by Morris and Sexton (1996). According to Morris and Sexton (1996) entrepreneurial intensity is a frequency and degree of entrepreneurship based on innovation, proactiveness and risk taking (Thoumrungroje, 2003). Heilbrunn (2008) also defines entrepreneurial intensity along the lines of Morris and Kuratko (2000) in that entrepreneurial intensity is a matter of degree, even though he is silent on frequency, he seems to interpret frequency as a part of a degree, in that he agrees with the definition of Morris et al., (1994). Morris et al., (1994) considers entrepreneurial intensity as consisting of the

degree and frequency variable. This evolution of definitions of entrepreneurial orientation and entrepreneurial intensity has led to some scholars focusing on the five dimensions or postures of entrepreneurial orientation and entrepreneurial intensity, whilst others only focused on the original three dimensions as presented by Miller (1993). Scheepers (2007); Morris and Sexton (1996); Antoncic and Hisrich (2001) argue that the degree of entrepreneurship consists of three key dimensions: innovativeness, risk-taking, and proactiveness (Scheepers, 2007). Based on the above, the main difference between entrepreneurial intensity and entrepreneurial orientation is the frequency and degree variable, as only entrepreneurial intensity considers these two variables. The frequency and degree of entrepreneurial activity is used to determine the entrepreneurial intensity of a firm (Shukla, 2009), while entrepreneurial orientation considers the three or five entrepreneurship dimensions, without the degree and frequency as main variables.

The frequency of entrepreneurship refers to the number of entrepreneurial events, while the degree of entrepreneurship considers the level at which these entrepreneurial events are consistent with the three entrepreneurial dimensions of innovation, risk taking and proactiveness (Erasmus & Scheepers, 2008). Morris et al., (1994) write that the frequency and degree of entrepreneurship describes entrepreneurship at both a micro (individual and firm level) and macro (national and international level) (Saat, 2012).

The concept of entrepreneurial intensity is about frequency (number of entrepreneurial events) and degree (the extent at which such activities are innovative, risky and proactive) (Saat, 2012). The element of frequency and degree has enabled entrepreneurship to be tangible and measurable. According to Morris et al., (1994), entrepreneurial intensity is about entrepreneurship at a micro (individuals and organisational) and macro (national and global) levels of business environment (Saat, 2012). In ensuring that the level of entrepreneurship is measurable at micro and macro level, Morris and Sexton (1996) developed five category scales of measure, continuous/Incremental, Revolutionary, Dynamic, Periodic/Incremental and Periodic/Discontinuous (Thoumrungroje, 2003). These five categories are

represented in Figure 2.1 above. (Refer to Table 4.3 for explanation of Entrepreneurial Orientation Factor 1 and Factor 2).

Hypothesis 1 (H1): Entrepreneurial Orientation has a positive effect on Entrepreneurial Frequency

H1a: Entrepreneurial Orientation factor 1 has a positive effect on Entrepreneurial Frequency.

H1b: Entrepreneurial Orientation factor 2 has a positive effect on Entrepreneurial Frequency.

2.5 Summary

The above discussion shows a very close association between entrepreneurial intensity and entrepreneurial orientation; crucial to this association is that both are aspects of corporate entrepreneurship. The frequency and degree of entrepreneurial activity is used to determine the entrepreneurial intensity of a firm (Shukla, 2009), while entrepreneurial orientation consider the three or five entrepreneurship dimensions, without the degree and frequency as main variables. Morris et al., (1994) write that the frequency and degree of entrepreneurship, describe entrepreneurship at both a micro (individual and firm level) and macro (national and international level) (Saat, 2012).

Central to the discussion of entrepreneurial orientation and entrepreneurial intensity has been its impact or benefits to the firms that apply it or do not apply it. Many scholars such as Piore and Sabel (1984); Miller (1983); Lumpkin and Dess (1996) argue that entrepreneurial orientation or entrepreneurial intensity in a firm enhances positively the firm's performance. However, other scholars dispute this view, scholars such as Wiklund (1999); Covin and Slevin (1999), argue that there is a lack of logical evidence to suggest a correlation relationship between entrepreneurial orientation and performance (Loos & Coulthard, 2005). These arguments and counter

arguments makes it necessary for the research to reflect more on the entrepreneurial orientation and entrepreneurial intensity dimensions.

2.6 Reflections on entrepreneurial intensity Dimensions

There is interest in the entrepreneurial intensity dimensions from the research as it provides an extrapolative variable of company performance. Many research studies have demonstrated that the higher the entrepreneurial intensity, the higher the profit, the more employment and growth in assets i.e. Covin and Slevin (1998); Davis, Morris and Ellen (1991); Miller and Friesen (1982); Morris and Sexton (1996); Zahra (1986); Kuratko, Morris and Covin (2011). Companies operating in a turbulent environment seem have a close relationship between entrepreneurial intensity and performance (Kuratko, Morris & Covin, 2011). Entrepreneurial intensity can be determined by many factors, however many scholars have used three dimensions on entrepreneurship, which are innovation, risk taking and proactiveness. Morris and Sexton (1996) and Antoncic and Hisrich (2001) argue that the degree of entrepreneurship consists of three key dimensions: innovativeness, risk-taking, and proactiveness (Scheepers, 2007).

In this section, a reflection on all five dimensions was made for the purpose of having a comprehensive picture of entrepreneurial intensity. This section considered five dimensions, including autonomy and competitive aggressiveness, in line with Lumpkin and Dess (1996)'s addition of aggressive competitiveness and autonomy on the definition of Miller (1983) and Covin and Slevin (1991), creating five dimensions in the entrepreneurial orientation. This evolution of definitions of entrepreneurial orientation and entrepreneurial intensity has led to some scholars to focus on the five dimensions or postures of entrepreneurial orientation and entrepreneurial intensity, whilst others only focused on the original three dimensions as presented by Miller (1993). Based on the above, the main difference between entrepreneurial intensity and entrepreneurial orientation is the frequency and degree variable, and not the number of dimensions considered in a study.

2.6.1 Innovation

Innovation is, according to O'Sullivan (2008), making a conversion to what is traditional through bringing newness to it. This is a practical definition that the research adopts, as it appreciates that innovation is not invention but that innovation is a process of development and improvement. Krentser et al., 2002, referred to entrepreneurship as the parent of innovation, as it drives newness and business development (Scheepers, 2007). Schumpeter (1934) describes entrepreneurship as a usage of resources in a way that creates imbalance in the economy. This imbalance, Schumpeter (1942) calls "creative destruction" (Loos & Coulthard, 2005). This creative destruction is as a result of innovation, introduced in the market by an entrepreneur. Wiklund (1998) explains this as meaning that an entrepreneurial firm is innovative in such a way that it affects the whole market (Loos & Coulthard, 2005) e.g. GPS. To have the ability to cause creative destruction in the economy, one need to be innovative, it can be a new innovation, in building on what is already there, modifying it or a totally new innovation that can cause imbalance in the market. Such innovation is also called a break-through innovation (Hisrich, Peters & Shepherd, 2008). The above means that innovation necessitates novelty and use of ideas (Mesa & Vidal, 2013). Hence Morgan (1990) argues that innovation is a carefully controlled chaotic process. Innovation is therefore not something that happens by chance, but is a well-planned process. Hisrich, Peters, and Shepherd (2008) argue that not all forms of innovation causes creative disruption in the economy, as some are just ordinary or technological.

Innovative process has four phases: (i) Systematic valuation of environmental transformation to classify likely prospects; (ii) opportunity valuation; (iii) opportunity development; (iv) opportunity seeking (Weiss, 1988). Looking at entrepreneurial intensity, innovation can be incremental or radical (Boashan and Haohan 2009).

In our research, we are using innovation to measure the extent of entrepreneurial intensity in the automotive industry of the Gauteng province, in respect of the extent of product development, solving market problems and creative destructiveness. Based on the above, we can argue that an innovative firm will be ahead in the

market and possibly be profitable; however, key to innovation, is the relevancy of the innovation in the market.

2.6.2 Proactiveness

Proactiveness is significant in the process of entrepreneurship. Proactiveness is about the entrepreneur being forward looking and innovating in the process of opportunity seeking (Lumpkin & Dess, 1996). It ensures that the entrepreneur is able to exploit the opportunities at first hand. Lieberman and Montgomery (1988) refer to this as the 'first mover advantage'. The first mover advantage ensures that the firm has a chance to shape the market and maximise profit and possibly create a monopoly.

Venkataraman (1989) defines proactiveness as the action of seeking opportunities which may or may not be connected to the present business processes of a firm. This argument by Venkataraman necessitates the research to consider how proactive the Gauteng province automotive industry is in seeking other opportunities, especially since there are many factors affecting opportunity seeking, factors such as strong rule of law and property rights in a particular country (Venter, Rwigema & Urban 2013). If entrepreneurs find that, there is an open free market system. They are likely to seek more opportunities in that particular country, social and cultural factors such as the positive status of entrepreneurship in a country and individuals' socialisation on issues of entrepreneurship are key in shaping opportunity seeking (Venter et al., 2013).

The above is very important especially that entrepreneurial opportunities represent new unknown ways of doing things (Kirzner, 1973). Corbett (2007) suggests that the ability to appraise opportunities is an intellectual exercise which is based on the experience one has on making judgements or decisions (Mitchell, Busenitz et al., 2002). Therefore, the earlier cited factors such as rule of law are key in shaping decision making in opportunity seeking. Entrepreneurial strategy and vision are key in decisions relating to opportunities arising from the external or internal environment, however many firms' opportunity horizon is limited, due to the tendency

of firms to be in the comfort zone, content with the status quo (Kuratko, Morris & Covin, 2011).

Opportunity seeking assessment framework is also used to check the companies' approach in opportunity seeking, as developed by Kuratko, Morris and Covin.

2.6.3 Competitive Aggressiveness

Scholars such as Covin and Slevin (1989), Lumpkin and Dess (1996) and Knight (1997) argue that proactiveness is equivalent to competitive aggressiveness (Loos & Coulthard, 2005). There is a thin line between the two but they are not similar, as proactiveness is influenced by the same objectives as that of aggressive competition. The difference is that proactiveness has to do with meeting the market expectations and aggressive competitiveness has to do with competing for market (Lumpkin & Dess, 1996).

The current state of the Gauteng province automotive industry as discussed earlier, suggests that there is a need for competitive aggressiveness, as the province is challenged by other provinces such as Kwa-Zulu Natal, Eastern Cape, Western Cape, and even other countries. The extent of competitive aggressiveness of Gauteng province would determine if the province continues to be a key player in the automotive industry or not. Competitive aggressiveness can be attributed to the environment.

2.6.4 Environmental Factors (More on Environmental Hostility)

The environment in which the firms operate is crucial in deriving low or high levels of entrepreneurship (Yusuf 2002). According to Khandawalla (1977); Foxall (1984); Covin and Slevin (1989); Zahra and Bogner (1999), If the environment is hostile or ambiguous, it will result in a high entrepreneurial intensity and if it is not hostile, it will result in a low level of entrepreneurship (Baoshan & Haohan 2009). Many research studies have found that from 8% to 30% of firm profitability is linked to the environment of the industry in which a firm competes (Kaiser 2009). Environmental

factors which can affect entrepreneurial intensity are socio-cultural, political, and economic conditions, government policies, financial conditions, suppliers and customers(Venter et al., 2013).

These environmental factors can be measured by the level of changeability and predictability. The degree of changeability and predictability determines if individuals and firms are prepared to take a risk and be innovative or engage in any new economic venture. It should be noted that the higher the change in factors like technology, positive economic growth and positive social change result in high entrepreneurial intensity (Venter et al., 2013).

Hypothesis 2 (H2): Environmental Hostility has a positive effect on Entrepreneurial intensity.

H2a: Environmental Hostility has a positive effect on the entrepreneurial orientation dimension of Innovation.

H2b: Environmental Hostility has a positive effect on the entrepreneurial orientation dimension of Proactiveness.

H2c: Environmental Hostility has a positive effect on the entrepreneurial orientation dimension of Risk Taking

2.6.5 Autonomy

Autonomy brings about latitude to determine how and what task to perform (Lewin-Salomons, 1998). Thus, we refer to autonomy as the scope for 'entrepreneurial freedom' an entrepreneur has to work according to his to own judgment (Cochet; Dormann & Ehrmann2008). Autonomy is about an independent idea introduced by an individual or a team and being implemented to its logical conclusion (Lumpkin & Dess, 1996). It is therefore relevant to entrepreneurial intensity, in that for a firm or industry to be innovative, sustainable and led, there should be a degree of autonomy. Entrepreneurship has succeeded in the past because independent thinkers in firms or industries decided to take a risk and not conform to the

established standards (Lumpkin & Dess, 1996). It should be noted that for this to succeed the entrepreneur needs to have the support of management in a firm.

In measuring the extent of entrepreneurial intensity in the automotive industry, autonomy in an established environment with its rules, culture and history, to be autonomous may have a risk of being viewed as a rebel. It is also clear that for autonomy to prevail in the industry there should be an element of risk taking.

2.6.6 Risk Taking

According to Cantillon, an Irish economist, entrepreneurs are experts in taking a risk, as they pay workers first before selling the product in the market (Cassis & Minoglou, 2005); this argument of Cantillon means that risk is an integral part of entrepreneurship. Miller (1983) argues that a firm's activity of scanning, communication and integration are positively linked to risk taking, Miller and Friesen (1982) also argue that the decision on projects have to do with risk taking. Morris and Sexton (1996) describe risk taking as a willingness to invest resources to a project with a possibility that it may fail. This is very sensitive in that it involves resource usage. No firm would like to lose money and for firms to make more money, risk must be taken. Therefore, risk taking is an action that has a possibility to make losses. Risk is high when there is a desire to make revolution in the market and come out with a new product (Kuratko, Morris & Covin, 2011). Risk taking is therefore the key to entrepreneurial success or failure. There are different types of risk, such as time risk, technical risk, investment risk and comparative risk, identified by Zimmerer and Scarborough (1996) and also Venter et al., (2008) contribute to the categories of entrepreneurial risk by adding career risk, family and social risk, as well as psychological risks, as cited by Antonites and Wordsworth (2009).

However according to Palich and Bagby (1995), most entrepreneurs get into risk with a low sense of losing, compared to non-entrepreneurs (Scheepers 2007). This element in entrepreneurs is what other scholars call the level of risk tolerance. Van de Venter (2006) describes risk tolerance as the amount of risk that an entrepreneur is willing to take. Van de Venter further categorises risk tolerance as subjective and

objective. Subjective risk tolerance is an individual's approach to risk and objective risk tolerance, assesses the actual quantifiable risks taken, making it difficult to measure (Antonites & Wordsworth, 2009).

Factors such as contact to entrepreneurial activity, financial knowledge and gender influence meaningfully on the risk tolerance, while factors such as culture, age, marital status and home ownership status, among others; have very little impact (Antonites & Wordsworth, 2009). By determining the extent of risk taking in the Gauteng automotive industry, we are able to determine the entrepreneurial intensity of the industry.

2.6.7 Size, Age and Type of Firm

There is significant scientific evidence that about 50% to 80% of start-up firms cease to operate within five years of starting (Venter et al., 2011). In fact, entrepreneurship is mostly accomplished by big long-standing firms (Bhattacharyya 2006). However, according to Block and MacMillan (1993), it should be noted that there is much ambiguity regarding the age at which a firm makes profit out of corporate entrepreneurship activities (Zahra & Covin, 1995). This uncertainty is a result of how the findings are reported within the literature (Zahra & Covin, 1995). For example, in a study of 11 firms' start-ups (which are a form of corporate entrepreneurship activity), Fast (1981) found that an 18% ROI was achieved by the third year of operations. Von Hippel (1977), in a study of 18 corporate ventures, reported that 60% became "successful" (defined as having achieved 10% pre-tax profit) within a three- to five-year period. In a comparative study of corporate venturing practices in U.S. and Japanese Companies, Block and Subbanarasimha (1989) reported that the mean time required to break even was 27 to 30 years, and this held for ventures in both countries. One conclusion of the Block and Subbanarasimha (1989) study was that time-to-profitability cannot be predicted by using any simple formula. Rather, it is affected by a complex set of factors including the structure of the market, the venture's basis for competitive advantage, and the resources applied to the venture

(Zahra & Covin, 1995). This means that to conduct a sound study on entrepreneurial intensity of any firm we need to take into account the age of the firm.

Churchill in 1997 developed a firm's growth model, which argues that the value is created when the company grows. He explains his model through reflecting on the size and age of a firm, by placing them on six growth phases of a company growth. Smaller companies in size are susceptible because of restricted access to funding, debt capacity, market share and technology acquisition (Autio, 1997), meaning that smaller companies are therefore less entrepreneurial due to the above limits.

The type of a firm also has an impact on how the firm views entrepreneurship. According to Snow, cited by (Brizek, 1978). there are four types of firms (i) The defender firm is less entrepreneurial, as it focuses on defending the space it is in, less risk taking and opportunity seeking; (ii) reactors lack initiative and are always forced by the environment to adapt, especially the external environment, lack entrepreneurship; (iii) Prospectors, is a firm that is always opportunity seeking and innovative; (iii) Analyser, very strategic, proactive and mostly consist of technopreneurship (Brizek). The firms that are likely to be entrepreneurial are the prospector and analyser firms, as they have the same dimensions of entrepreneurial orientation, such as innovation, proactiveness and opportunity seeking.

2.6.8 Management Support

Management is responsible for creating dominant logic, in a firm, if the dominant logic is that of innovation and risk taking, the firm will be entrepreneurial (Kuratko et al., 2011). The manager should be able to link strategy of the firm with entrepreneurial activity in a firm, through encouraging entrepreneurial behaviour, through positive resource allocation and reward systems (Kuratko et al., 2011). Peters and Waterman (1982) submit that corporate entrepreneurship in a firm advances financial performance (Zahra & Covin, 1995). However, weak organisation, weak strategic focus, and ineffective organisational politics often destroy corporate entrepreneurial activities (Burgelman & Sayles (1986); Sexton and Bowman-Upton, cited in Zahra & Covin 1995). This means the more management creates a positive

environment in a firm to support entrepreneurship, the higher the level of entrepreneurship. Managers should be able to deal with the dark side of entrepreneurship, such as lack of respect for rules, need for recognition, and fruitless expenditure.

Managers should create a system fit for entrepreneurs so that they are managed in an entrepreneurial way, which tolerates failure (Barreira, Urban, Dhlwayo, Naude, 2008).

It is also critical for managers to recognise entrepreneurial character in a firm and reward it, in public through incentives.

2.7 Entrepreneurship in Automotive Industry

The automotive industry is highly competitive, risky and innovative throughout the world, making it to be very flexible, unstable and unpredictable (Muller, 2009). This environment makes the automotive industry very entrepreneurial in nature. Firms in the sector are expected to apply strategies in dealing with the globalisation of the sector, with product diversification and competitive aggressiveness from big players in the sector between General Motors, Toyota, Hyundai and Volkswagen (Muller, 2009). Any firm that wants to survive in such an environment needs to feature high on the five entrepreneurial orientation dimensions and on the entrepreneurial intensity grid, making it highly innovative, risky and proactive, beating competitors to the punch (Miller, 1983).

The automotive industry is the major feeder of many economic sectors such as iron and steel, petro-chemicals, glass and rubber. It therefore creates many economic opportunities and jobs through its suppliers as well as the secondary sectors of selling cars, distribution, fuel, financial services and insurance services (Beşkese & Şakra, 2010). This is why it is viewed as the main economic player by most industrialised nations, and its rise and success is critical in the developing countries (Beşkese & Şakra, 2010). The above makes scholars such as Drucker (1946) describe the industry as 'the industry of industries'. Other scholars such as Womack

et al (1990); Barners (2008) and Sturgeon and Florida (2000) also used the same phrase for the automotive industry (Mohubetswane, 2010). These scholars used this phrase to describe the automotive industry, in that through the industry many other industries are founded and sustained, i.e. insurance, glass, tyre, filling stations, steel, paint and oil industries. All of these industries are founded and reliant on the automotive industry.

upstream	core	lowstream
•mining •steel •fuel •ruber,plastic •electroics	•original equipment manufacture •passanger vehicle •commercial vehecle •two wheel •component manufacture	•finacial services •insurance services •sales •second hand •markerting •petroleum •transportation

Source: Kearney Analysis 2013

Figure 2.4: Divisions in the automotive industry

The above suggests that the automotive industry is vast, complex and yet integrated. We therefore argue that organisational learning is pivotal in such environment in agreement with many scholars who have concluded that the key to firm success is the ability to learn faster than competitors (Dickson, 1992). Sadler-Smith et al.(2001) also note that there is vivid evidence that the petroleum, financial services, and the automotive industry experienced the 'power of learning', and those who learnt quickest won the competitive 'race' (Wang, 2008).

2.7.1 Automotive Industry – South African Perspective

The South African automotive industry developed quickly during the period between the 1950's and 1980's as demand was very high, making sales tenfold during this period (Black, 2001). The economic sanctions and political instability in the 1980's has seen the industry negatively affected resulting in the decline in growth. The globalisation of the South African economy in the 1990s had also delayed growth in

the industry (Black, 2001). However, SA remains the largest manufacturer of vehicles in Africa, producing 84% of vehicles in the continent (Mohubetswane, 2010). South Africa's automotive industry is both nationally important (Barnes, 2007) and Important in Africa. South Africa contributes 40% to Africa's GDP, and has more cars than the rest of Africa combined (AIEC 2008). The automotive industry is the leading manufacturing sector in the South African economy, contributing R1.995 billion (6.9%) in 2007 to the country's GDP. According to South African Automotive Week (SAAW) magazine: 'there are more than 200 automotive component manufacturers in South Africa, and upwards of another 150 that supply the industry on a non-exclusive basis' (SAAW 2009). In terms of exports, the automotive industry in South Africa contributed 13.7 per cent in 2007 (AIEC 2008), and has an important direct employment contribution, according to OICA, of 112 300 jobs. Other activities from the analysis of the industry of industries included, the automotive industry contributes far more jobs to the South African economy than just assembly and component production operations. All of this makes South Africa's automotive industry nationally important (Barnes & Morris, 2007). However, according to Barnes and Morris (2007), global competitive pressures are substantial in the industry, whose survival under globalisation processes is credited largely to the Motor Industry Development Programme (MIDP) (see, for example, Barnes 2008; Barnes & Hartogh 2009; Black 2001). Barnes (2008) points out that the MIDP has largely managed to assist the automotive industry with global reintegration. He argues that this has occurred with positive adjustments in realigning the position of the South African automotive industry within a global, rather than national, framework. This, writes Barnes (2008), is evidenced in large scale export programmes with a substantial growth of components exports. The South African automotive industry emerged in the early 1920s, with FMC and GM being the first to establish a production presence in the country (Black, 2001). This industry developed under a series of Import Substitution Industrialisation (ISI) programmes, with high levels of protection, at the centre of which was the objective of increasing local content (Black, 2001). Table 2.2 shows the evolution and transformation of the South African automotive industry, by comparing the period before and after 1994.

PRE 1994	POST 1994
Automotive industry grew rapidly under high levels of protection from 1950 to 1980s with sales increasing ten times	MIDP supported export complementation through tariff phase-down at a higher rate than that of SA's WTO obligations
During the 1980s, the economy entered a period of slow growth constrained by political instability, decline in revenues and increasing international isolation	Industry becomes exposed to international competition. Phased reduction in tariff protection on built vehicles and components introduced
Industry inward looking, fragmented industry with low output.	Assembly and component grew to be the fourth largest recipient in SA economy of foreign direct investment

Table 2.2: Pre 1994 versus Post 1994

Source: Poee. Automotive Industry Conference 2012

It is a widely-shared perspective that without the MIDP (now the Automotive Production Development Programme or APDP), the South African automotive industry would not have survived globalisation processes (see, for example, Barnes & Morris, 2007; Black 2001, 2008). There is, however, an exception to this viewpoint i.e. Frank Flatters (2005) is of the view that the MIDP, and therefore by extension the APDP represents waste, and therefore, that policy focus must be redirected to the motor retail sector, where most jobs are located, rather than in the capital-intensive production processes as characterised by assembly plants' operations. Flatters'

(2005) frame of thought is, however, not aligned to the strategic importance of manufacturing, in particular, viewed in the entirety of the automotive industry as the industry of industries.

The questions that should be addressed to understand the entrepreneurial intensity on the automotive industry in Gauteng province are the following:

- (i) What is the extent of entrepreneurial intensity in the automotive industry of Gauteng?
- (ii) Is there a significant relationship between entrepreneurial orientation and entrepreneurial frequency?
- (iii) Is there a significant relationship between environmental hostility and entrepreneurial intensity?
- (iv) Is there a significant relationship between entrepreneurial intensity and entrepreneurial orientation?

In an attempt to answer these questions, the research focuses on the Gauteng automotive industry in respect of the existing entrepreneurial intensity.

2.7.2 Gauteng Value in Automotive Industry

Gauteng is the leading economic province in South Africa. In 2011, it registered a positive economic growth of 4.7%; largely attributed to the automotive, retail and property industry (Stats SA, 2011). Gauteng contributes 68% of exports and 61% of imports in the total economy of South Africa (Stats SA, 2011). According to the National Association of Automobile Manufacturers of South Africa (NAAMSA), Gauteng is leading in the automotive cluster. It has 164 automotive components companies, compared to 82 from Eastern Cape, 84 from Kwa-Zulu Natal and 20 from Western Cape. Gauteng is also host to seven international automotive companies, compared to three from Eastern Cape and one in KZN (DTI, 2012). The automotive industry of Gauteng is competing with the best in the world, sharing the

global stage with countries such as Germany, Japan, US, United Kingdom (UK), South Korea, Spain, China, Thailand, Brazil and France (DTI, 2012).

Gauteng is the greatest contributor of gross domestic product (GDP) compared to other provinces and its contribution is not only in SA but also to Southern Africa. With the SA economy diversified as below, most of the activities in the economy of SA are based in Gauteng, making the province a power house of SA economy. Agriculture 2.2% Mining: 10% Manufacturing: 12.3% Electricity and water: 2.6% Construction: 3.9% Wholesale, retail and motor trade: 16.2%.Transport, storage and communication: 9% Finance, real estate and business services: 21.2%: Government services: 16.7%Personal services: 5.9 %(2012 GDP data from Statistics SA).Based on the above information, the question arises: how can South African entrepreneurs, based in Gauteng, stimulate the automotive industry and contribute to prosperous economic development of the province and that of SA as a whole?

To answer this question a reflection on Schumpeter's theory on "gale of creative destructive" is pivotal. Entrepreneurs must develop a totally new industry by not following the current existing technology, but by introducing new products in the economy, which will disrupt the current mode of production (Coobs, Saviotti & Walsh, 1994). In the case of the automotive industry, the entrepreneurs will not be innovating new technology, but advancing it and contributing to the technology relevant to the economy. By so doing, they will be creating disruption in the current pattern of demand and supply in the countries automotive industry.

Entrepreneurs stand a great chance of succeeding, if the Gauteng Provincial Government adopts the American attitude to new emerging technology, the attitude of protecting the small firm and not the monopoly (Lucas 2003). This means that the Gauteng Provincial Government needs to protect entrepreneurs who are focusing on adding value to the automotive industry; a Taiwan approach to high technology development during the 1990's when Taiwan was faced with foreign firms pulling out of the economy, due to high cost of production (Amsden& Chu 2003).

South Africa is seen to be facing the same situation today, with international companies in the automotive industry threatening to leave the country due to unstable labour for example, BMW and Nissan (City press 2013). The implication of this threat, should it be carried out, would mean that Gauteng would be at a greater threat than any other part of SA. Faced with similar conditions, Taiwan became the late comers in the high-tech sector. They had been relying on the American and Japanese firms. When the local economy was challenged by foreign investment disinvesting and investing in countries where labour costs were low, Taiwan entrepreneurs had to resist or face an economic vicious cycle of underdevelopment (Venkataraman 2004). The resistance by Taiwan to falling into the economic cycle lead to the transformation of Taiwan electronic industry and transformation of the whole economy of Taiwan. The Taiwan local entrepreneurs learned from the Japanese firms which invested in Taiwan; this technological transfer capacitated the local entrepreneur to develop local firms. It should be noted however, that this move was carefully planned by the Taiwanese and it happened over a long period of time (Amsden & Wen Chu 2003).

Is Gauteng able to replicate the Taiwanese model of economic transformation and development through automotive industry, to be the Silicon Valley of South Africa and transform the whole national economy and the region? The Automotive Industry Development Centre (AIDC) and the ASP, are a step in the right direction by Gauteng however, more needs to be done. As the current automobile strategy of South Africa, called the motor industry development programme (MIDP) and the National Industrial Participation Programme (NIPP) needs to be reviewed as it is silent on manufacturing and modification to suit the South African industry. The key players in the industry, who developed the strategy, need to view the automotive industry as an opportunity that can be used to the benefit of the country. Moreover, if the threats that are identified in the strategy can be challenged through the local production of key automotive parts, the scale will move towards more strength and opportunities for South African automotive industry.

2.7.3 Entrepreneurship in Automotive Sector and Job Creation and Economic Growth

There is evidence that start-up firms form a major part of high growth firms and also create high employment figures. For example studies by Fritsch and Mueller (2004); Mueller, van Steel and Storey (2008); and Mueller (2008) all find strong evidence that employment growth is accounted for by new firms. These studies show that employment creation is high in the year in which the firm is founded and then decreases overtime (Audretsch, 2012). The South African motor retail industry has also noted this trend in the sector, as 80% of businesses that create jobs in the sector are small in size employing not more than 30 people in a firm (Engineering news, 2015). Currently, the aftermarket sector in South Africa has more than 21 000 people that it employs; this shows how important the small players are in job creation in the automotive industry (Engineering news, 2015). In 1994, a study was undertaken which reflected that small new firms create jobs rapidly.

These companies can be described as “gazelles”, a term introduced by David Birch to describe small, fast growing companies, with high potential of job creation (Dautzenberg, Ehrlenspiel, Gude, Käser-Erdtracht, Schultz, Tenorth, and Tscherntke & Wallau 2012). These gazelles change from small to large rapidly, therefore to classify them by size may be limiting on great innovation and rapid job growth (Birch & Medoff, 1994). In fact, gazelles were found across all industry and sector contexts, with each industry exhibiting the same share of rapidly growing firms. In a different study, Birch, Haggerty and Parsons (1995) found that all of the new employment in the American economy was attributable to gazelles (Audretsch 2012) Bruederl and Preisendoerfer (2000) come up with a criterion for classifying a firm as being high employment growth, the firm had to have survived at least four years. On average, gazelles are younger and smaller than other firms, but it is young age and small size firms, that are associated with rapid economic growth (Audretsch, 2012).

The South African automotive sector has big plans for job creation through the automotive industry, as there are plans to create 5million extra jobs in the sector by 2020 (APDP), and this will ensure the sector remains relevant and productive.

2.7.4 Entrepreneurial Intensity Frequency and Degree in the Automotive Industry

Brush and Vanderwerf (1992) observed that the most important tool to measure a firm's value was employment and sales growth (Loos & Coulthard, 2005). The above observation is relevant in measuring the automotive industry in Gauteng by looking into entrepreneurial intensity and its value in job creation in the economy of the province. We therefore use the degree and frequency of entrepreneurship to establish the value of entrepreneurial intensity in automotive industry on the economy of Gauteng, through employment creation in the province.

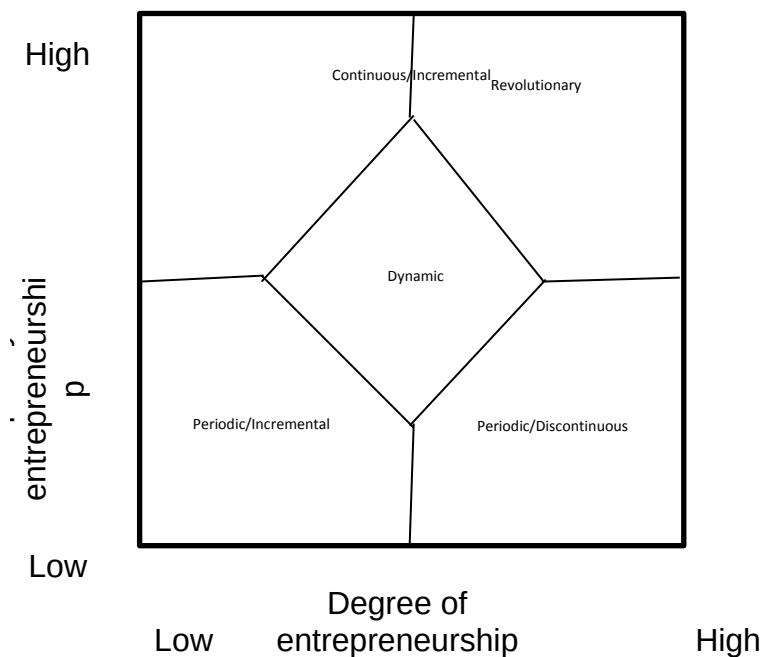
Studies by Golder and Telis (1993), Covin and Miles (1999), Lumpkin and Dess (1996), have demonstrated that entrepreneurship has strategic value to play in any industry or sector. This can be through strategic renewal, domain redefinition, sustained regression, and organisational rejuvenation (Gregory, Dess, Shaker, Ireland, Zahra, Floyd, Jay, Janney & Lane 2003). Throughout the history of economic development, there has been a considerable footprint of entrepreneurship; reference can be made to technological innovations that have changed the world economy, innovations such as computers, resulting in entrepreneurs forming companies such as Microsoft, Google and many others (Lucas, 2002).

The degree and frequency of entrepreneurship in an economy determines the pace and the level of economic development (Thoumrungroje, 2003). This degree and frequency of entrepreneurship is called entrepreneurial intensity. Morris and Sexton (1996) developed the notion of entrepreneurial intensity. The concept of entrepreneurial intensity can be viewed as part of entrepreneurial orientation, in that it contextualises the attitude and the character of entrepreneurial orientation, which includes innovation, risk taking, proactiveness, aggressive competition and autonomy, within a firm or an industry (Thoumrungroje, 2003).

Scholars such as Lau and Chan (1994); Morris and Jones (1999) and Antoncic and Hisrich (2000) have recognised innovation, risk taking and proactiveness broadly as entrepreneurial character. Building on these three broadly acceptable

entrepreneurial characters, Morris and Sexton (1996) developed a five dimensional grid as presented in Figure 2.5 which presents different entrepreneurial levels in a grid, to determine the frequency and the degree of entrepreneurial intensity in a firm or industry.

The industry can be put in a grid according to its frequency or degree of entrepreneurship. The grid has five levels which are periodic/incremental, continuous/incremental, periodic/discontinuous, dynamic and revolutionary. Industries with many entrepreneurial activities that are innovative, risky and proactive will be placed on the grid as revolutionary and those with few entrepreneurial activities and low on innovativeness, risk-taking and proactiveness will be placed on the periodic/incremental level of the grid (Hentireilbrunn, 2008,).



Source: Morris et al. (1994)

Table 2.3: Entrepreneurship Grid

Since 1994, entrepreneurship has been encouraged in South Africa but not much success has been registered. When comparing South Africa to other developing countries such as India and Brazil, South Africa is low at 7.8% and with India and Brazil as high as 12 % (WBS, 2012). The 2011 GEM report noted that there is a

positive attitude towards Entrepreneurship in SA but very few people venture into this space, because of fear of failure (WBS, 2012). This fear of failure by South Africans can be attributed to lack of entrepreneurial intensity. Miles and Snow (1978) argue that the entrepreneurial problem is a common factor faced by all firms or industries (Lumpkin & Dess, 1996). This implies that if industries do not make a deliberate effort to increase their entrepreneurial intensity, that particular industry or firm will suffer and ultimately disappear. Since 1995, the automotive industry of SA has been experiencing a trade deficit (DTI 2012). This means that our local industry is not doing well compared to other countries around the world in the automotive industry. Developing countries such as Brazil, India and China have a strong presence in the automotive industry, but key players remain the developed countries such as Japan, United States of America and Eastern Europe (Mund 2011). Moreover, the SA automotive industry faces global competition (Barners & Meadows 2008). Noticing Drucker's (1946) definition of the automotive industry as the industry of industries, weak performance of this industry means that many other industries reliant on the automotive industry would also suffer (Mohubatshwe, 2010). Mohubetswane (2010) further argues that the world's leading economies have the largest automotive industry. This should be a concern for the Gauteng province as the automotive sector in SA and by implication, in Gauteng is not the number one economic performer, behind mining and a financial service (Barnes & Meadows 2008) there is a need to harness this sector and make a point that it grows consistently to ensure it has positive spinoffs. The industry should be revolutionary. This means that it should have the capacity to develop creative disruption in the market. This should not only be measured by the extent of entrepreneurial frequency, but also by the degree of innovation, risk taking and proactiveness in the industry. It should be noted that the motor industry development plan (MIDP) has done well in supporting the automotive industry of SA. Covin and Slevin (1991) argue that strong entrepreneurial intensity positively influenced the achievement of organisational mission, vision and operational objectives and organisational culture (Postigo, 2002). The question is, does this apply to the automotive industry of Gauteng or not? The research embarks on an academic process to try and answer this question and the questions asked earlier.

Hypothesis 3 (H3): Entrepreneurial intensity has a positive effect on Entrepreneurial Orientation.

H3a there is a positive relationship between Entrepreneurial intensity and innovation

H3b there is a positive relationship between Entrepreneurial intensity and Pro activeness.

H3c there is a positive relationship Entrepreneurial intensity and Risk taking

2.8 Summary

The above demonstrate that we are in a period where the only survival in the economies of the world is, through business unusual or creative disruptiveness and the lower you are in that scale; the worse it will be (Hendler, Holiday, Ratcliffe, & Wakeford, 2007). This statement also applies to the Gauteng automotive industry, in that if the province, and its entrepreneurs fail to sharpen its entrepreneurial intensity, Gauteng may find itself at the bottom of the scale, sinking deeper into a vicious economic cycle. The automotive industry as a sector has experienced many challenges in its quest to create jobs and to contribute positively in the economy of South Africa, with the following factors cited as common inhibitors: poor skills, minimum wages and the multinational corporation role in the sector (NEDLAC, 2005). However, it is very much pivotal to emphasize the integrative model of entrepreneurship, in ensuring positive entrepreneurial activity, as the model, ensures that there is an entrepreneurial process, in a form of organisation/firm, value creation. It should also be noted that the integrative model and the entrepreneurial grid demonstrate that entrepreneurial activity differs in nature as it depends on the industry type, country economy and even the dominant logic in a particular time (Morris, Lewis & Sexton, 2001).

However even though entrepreneurs have a character of being haphazard, They follow a process, that is thoughtful in respect of risk taking, innovation and even

comparative aggressiveness, this can be explained by this can be explained through what is called Entrepreneurial Ideational Process (EIP). This is a well-considered process of developing ideas, problem solving (Gemmell, 2013).

3 CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The following section summaries the methodology proposed to conduct this study. To begin with, the literature around quantitative research is discussed, followed by a discussion of the research design and research instrument that were used. Concerns of data collections and analysis in relation to this study are presented, followed by a discussion on how the validity and reliability of this study was ensured.

3.2 Research Design

A quantitative research approach was chosen for this study as the study sought to measure the extent of entrepreneurial intensity in the automotive industry in the Gauteng province. A research design refers to a blueprint, plan or specification of processes or operations that would be undertaken in order to investigate a research question or hypothesis in a certain research project (De Vos, Strydom, Fouche & Delport, 2011). Quantitative research designs include experiments, surveys and content analysis.

3.3 Population and sample

In this section, the population that was targeted in the study is discussed, together with the sampling method that was employed in selecting the sample included in the study.

3.3.1 Population

Seaberg, cited in De Vos et al. (2011) defines a population as a total or a whole from which units or individuals to be included in a research study are selected. The population target in the study is discussed in two parts namely, the automotive firms and the officials in the automotive firms. Firstly, the population targeted in the study

was also made up of the different officials designated within the firms in the automotive industry. These officials included managers, administrative officials, operational officials and sales officials.

The operational automotive firms in the Gauteng province made up the other population in the study as a sample of these firms was selected for inclusion in the study.

3.3.2 Sample and sampling method

According to Kerlinger, cited in De Vos et al. (2011), a sample is any portion that is taken from a population for inclusion in a research study as a representation of that population. There are various methods that are used to select a sample in research and a non-probability, purposive sampling method was used in the study. Purposive sampling method means that a researcher is interested in specific characteristics in the respondents and therefore sets criteria for selecting respondents to be included in a study. In this study, the researcher wanted the sample to be inclusive of officials from management, administration, sales and operations departments of the automotive firms as shown in Table 3.1. The total size of the sample to be selected for inclusion in the study was 280. However, this number was not reached and there were some spoilt questionnaires as well. Therefore, the actual respondents in the study were 170.

Table 3.1: Profile of respondents

DESCRIPTION OF RESPONDENT TYPE	NUMBER TO BE SAMPLED
• Original equipment manufacturing. Nissan SA, Toyota SA, BMW SA, Fiat auto SA, Mercedes Benz, Renault SA and Ford.	90
• Automotive components manufacture	80
• Sales i.e Motor dealerships	60
• After sales i.e Panel beaters and mechanical repairs	50
TOTAL	280

The automotive firms were also selected using non-probability purposive sampling methods and the criteria for their selection was that they had to have been in operation for at least two years.

3.4 Data collection instrument

A Likert scale with seven responses was used as the data collection instrument in this study. The Likert scale was adopted, but modified, as it had been used in previous studies on entrepreneurial orientation/Intensity. Existing questions were re-phrased and new questions were added, based on literature on entrepreneurial intensity. The questionnaire consisted of 30 items divided into four sections namely, demographics factors with 1 – 6 items; item 7 – 13 were based on entrepreneurship orientation; items 14 – 24 were based on environmental hostility, and items 25 – 30 were based on frequency and innovation.

3.5 Data analysis

Data analysis in the study was conducted using Microsoft Excel whereby data were coded into categories and entered onto a spread sheet. Thereafter, data were analysed through a univariate analysis where the intention was to describe the entrepreneurial intensity variable (De Vos et al., 2011). Tabular and graphic representations of the analysis were produced. Later, hypotheses testing were conducted through Pearson correlations tests and Chi-Squared tests using Statistical Package for Social Sciences (SPSS) Version 22.

3.6 Validity and reliability

3.6.1 External validity

External validity is intended to determine whether results of the study would hold for other places should it be generalised (Cooper & Schindler, 2008). The ability and extent to generalise these research findings across population is limited due to the non-probability purposive sampling method utilised.

3.6.2 Internal validity

Internal validity refers to a situation in which a research design allows the researcher to draw conclusions from the origins and effects (Berander, 2007; Damm, 2007). However, there are certain factors which can affect the independent variables in a study without the knowledge of the researcher and internal validity is useful as it helps the researcher to identify these issues (Damm, 2007; Wohlin, et al., 2000).

3.6.3 Reliability

Bull, Maslin, and Armst (2009) define the reliability of the study as a research that produces consistent responses. This demonstrates that the qualitative data analysis is rigorous.

4 CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the outcomes of the study, in respect to the findings. A discussion around the validity and reliability of the measurement scale is provided first in this chapter. The findings of the study are presented in two different parts later in the chapter.

4.2 Demographic profile of respondents

In the following section the demographics of the respondents in the study are presented first, followed by the findings of the study. The demographics were categorised into gender, age, educational level and the level or position held in the company. Other aspects that were addressed under demographics were the ages and sizes of the automotive firms that were included in the study.

4.2.1 Gender

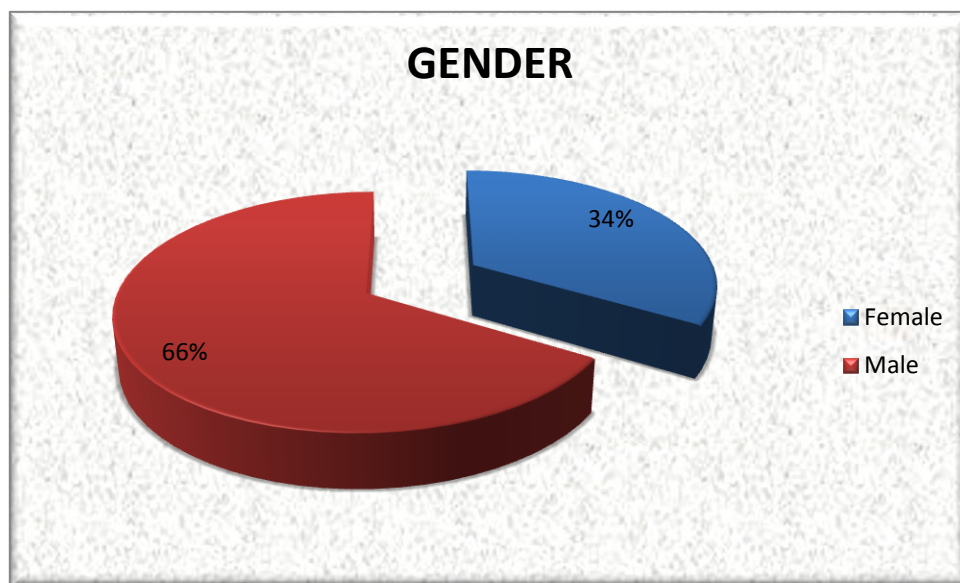


Figure 4.1: Gender

The majority of the respondents in the study were male making up 66% of the total and 34% of them being the minority were female.

4.2.2 Age

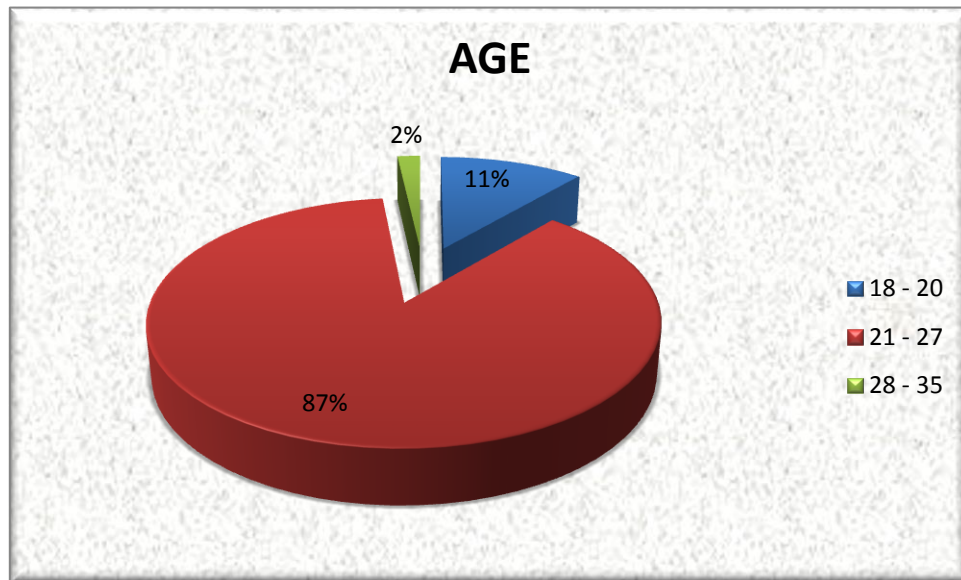


Figure 4.2: Age

87% of the respondents in the study were between the ages of 21 and 27 years, followed by those between the ages of 18 and 20 years who made up 11% and the remainder were those between the ages of 28 and 35 years (2%).

4.2.3 Qualification

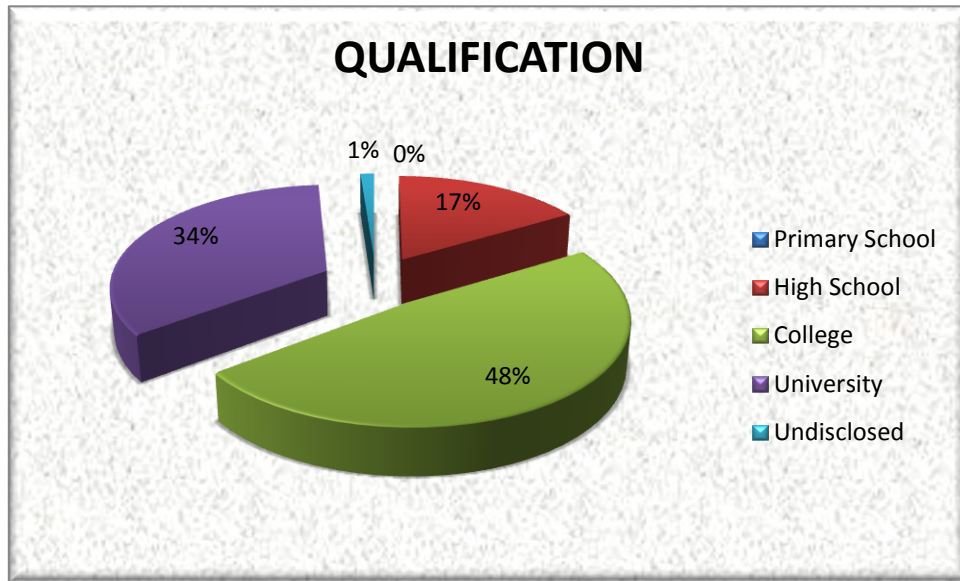


Figure 4.3: Qualification

Majority of the respondents, being 48%, indicated that they have a college qualification, whilst 34% of them that indicated that they have a university qualification. 17% indicated that they have a high school qualification and only 1% did not indicate their qualification.

4.2.4 Sector

Table 4.1: Sector

SECTOR	FREQ.
Original Equipment Manufacturing	59
Automotive Components Manufacture	48
Sales i.e Motor dealerships	35
After sales i.e Panel beaters and mechanical repairs	28
Total	170

The size of the sample that had originally been envisaged to be included in the study was 280. However, this number was not reached and there were some spoilt questionnaires as well. Therefore, the actual respondents in the study were 170.

4.3 Entrepreneurial orientation

4.3.1 Preference of Managers in Business Unit

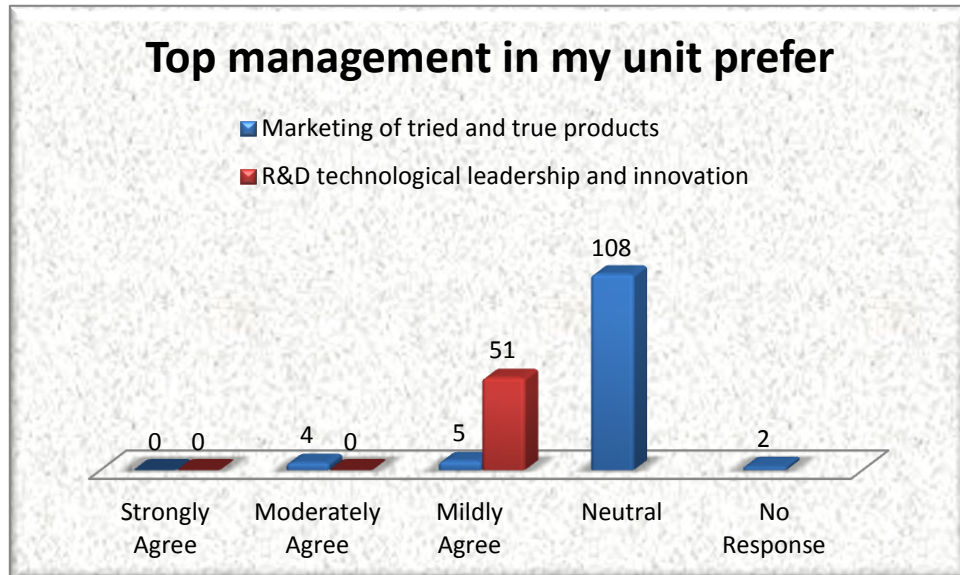


Figure 4.4: Preference of top managers

Majority of respondents (108) were neutral on this question. 51 respondents mildly agreed that top managers in their unit favour a strong emphasis on research and development, technological leadership and innovation; whereas a minority of respondents (4) indicated that their top managers favoured a strong emphasis on marketing tried and true products and services.

4.3.2 New Lines of Products and Services

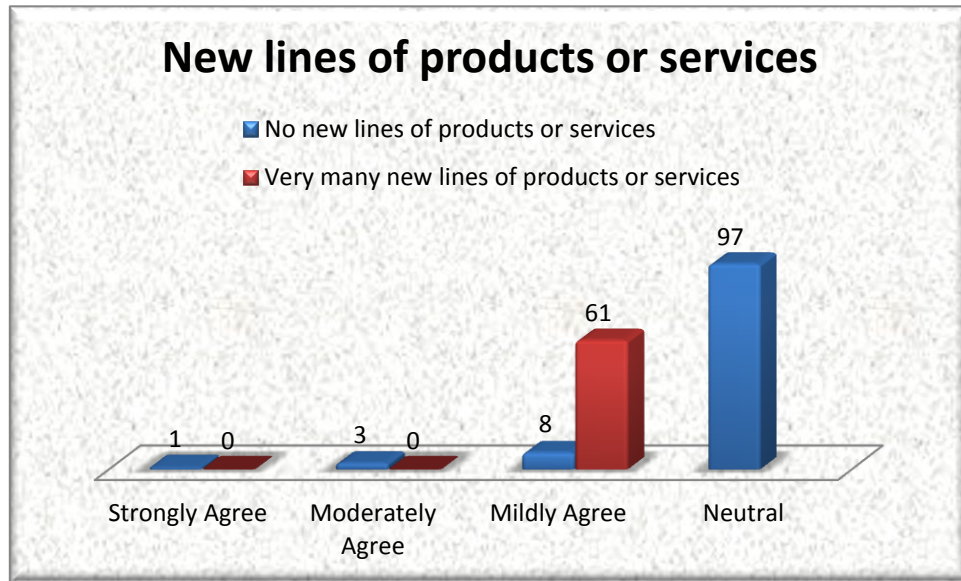


Figure 4.5: New lines of products or services

61 respondents mildly agreed that their business unit had marketed many lines of products or services over that past three years. 11 respondents being the minority stated that that business unit marketed no new lines of products or services over the past three years. Therefore, the majority of respondents stated that their business units marketed very many new lines of products or services, whilst the minority stated that their business units marketed no new lines of products or services. 97 respondents were neutral on this question.

4.3.3 Changes in Products and Services

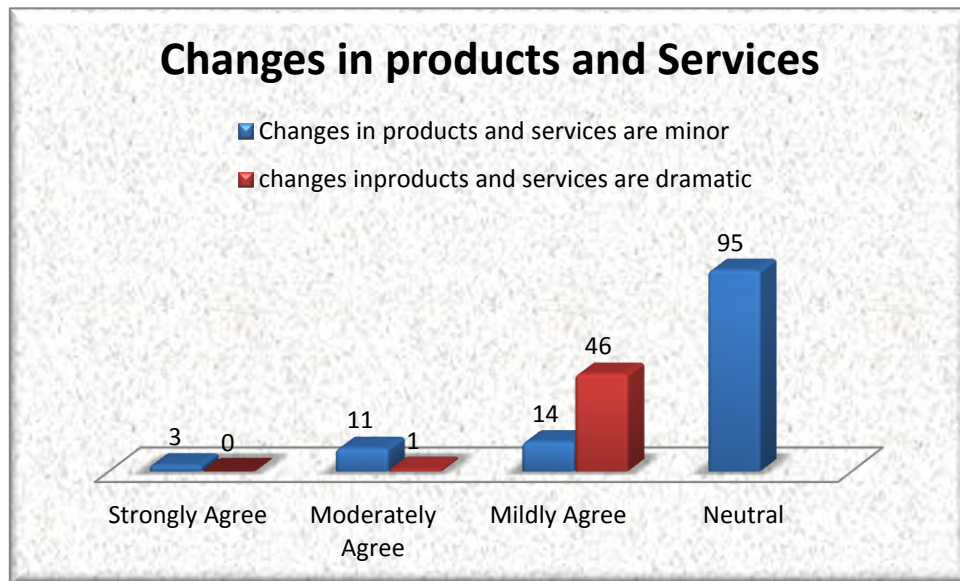


Figure 4.6: Changes in products and services

Majority of respondents (47) indicated that changes in products and services in their business units have been quite dramatic, whereas the minority (28) indicated that changes in products and services in their business units have been minor. Majority of respondents (95) were neutral on this question.

4.3.4 Dealing with Competitors

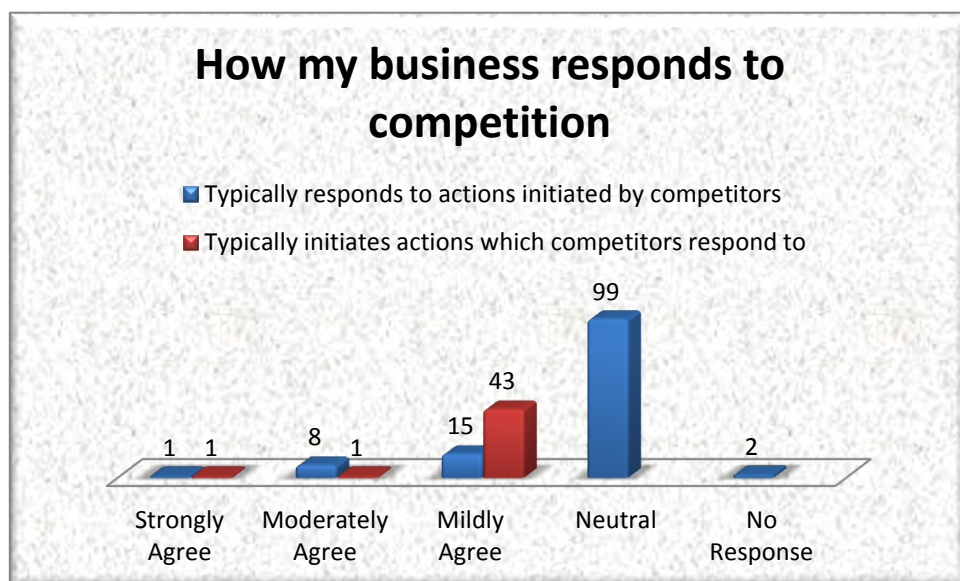


Figure 4.7: Dealing with competitors

It was a minority of respondents (24) who indicated that their business units typically respond to actions that are initiated by competitors, whilst the majority (45) indicated that their business units typically initiate actions to which competitors respond. 99 respondents were neutral on this question whilst 2 did not answer the question.

4.3.5 Introducing New Products or Services

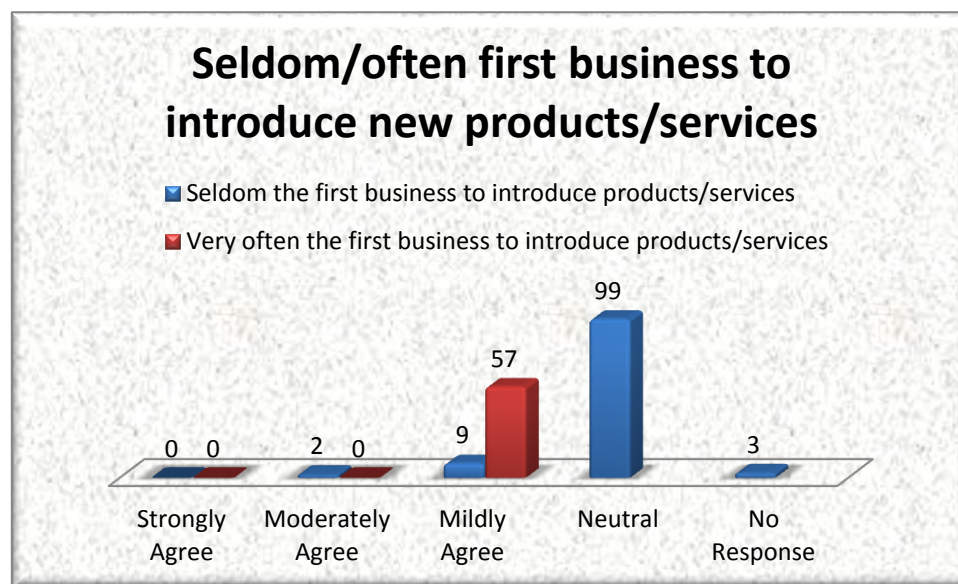


Figure 4.8: Introducing new products or services

Majority of respondents (57) indicated that their business units are often the first to introduce new products or services, administrative techniques and operating technologies, whilst the minority (11) indicated that that their business units are seldom the first to introduce new products or services, administrative techniques and operating technologies. 99 respondents were neutral on this question.

4.3.6 Response to Competition

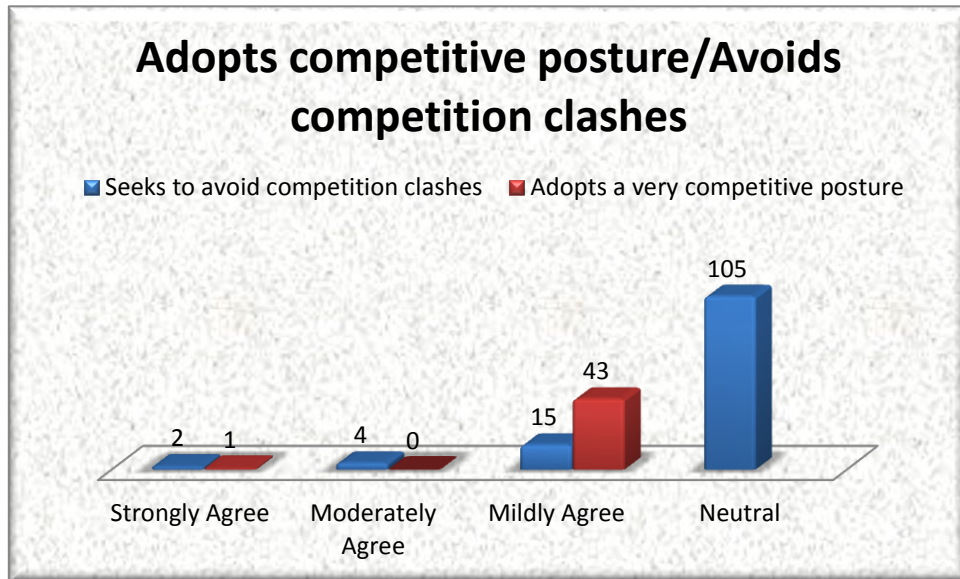


Figure 4.9: Response to competition

It was the majority of respondents (44) who indicated that their business units adopt a competitive posture. 21 stated that their business avoids competition clashes. 105 respondents were neutral on this question.

4.3.7 Proclivity for low and high-risk projects

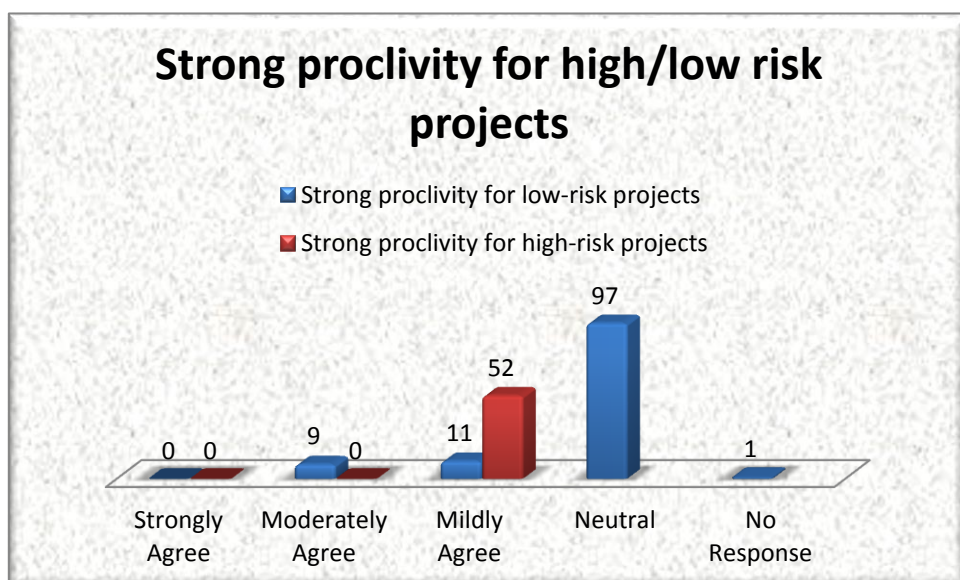


Figure 4.10: Proclivity for low/high-risk projects

Only 20 respondents being the minority agreed that their business units have strong proclivity for low-risk projects. 52 agreed that their business units have a strong proclivity for high-risk projects. 97 respondents were neutral on the question and 1 respondent did not answer the question.

4.3.8 Exploring the Business Environment

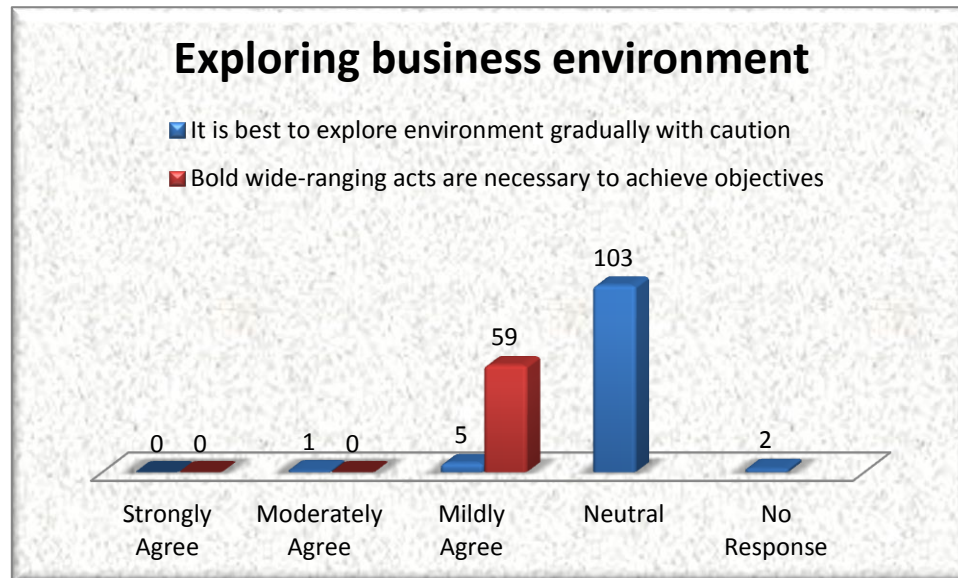


Figure 4.11: Exploring the business environment

Only 6 respondents agreed that managers in their business units explore the business environment gradually via caution and incremental behaviour. 59 respondents strongly agreed that top managers in their business units usually take bold and wide-ranging acts to achieve objectives. 103 respondents were neutral on this question and 2 did not answer the question.

4.3.9 Dealing with uncertain decision-making

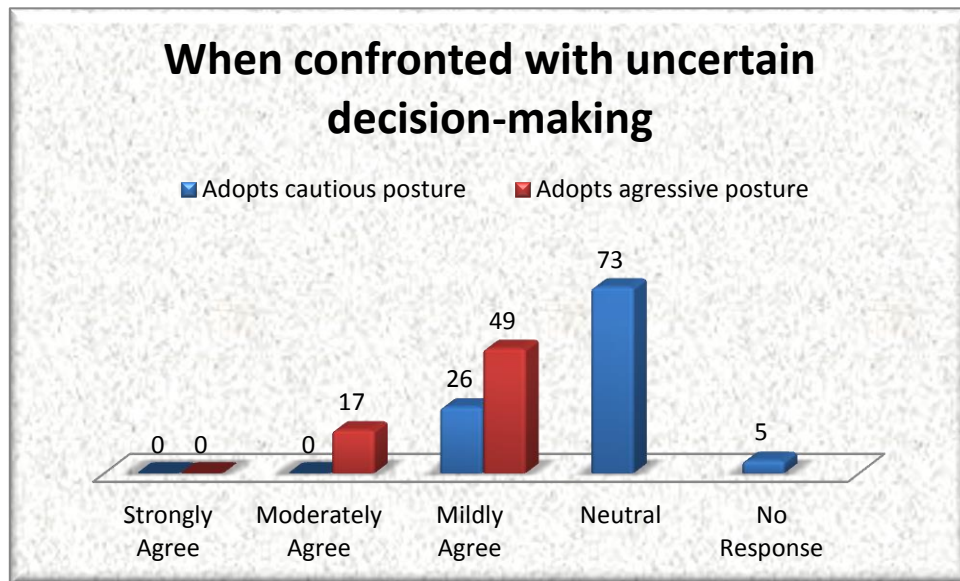


Figure 4.12: Dealing with uncertain decision-making

Majority of respondents (66) indicated that when faced with uncertain decision-making solutions, their business units adopt a bold and aggressive posture; whilst the minority (26) of them indicated that when confronted with uncertain decision-making solutions, their business units adopt a cautious posture. 73 respondents were neutral on this question and 5 respondents did not give a response.

4.4 Environmental hostility

4.4.1 Failure Rate in the Industry is Very High

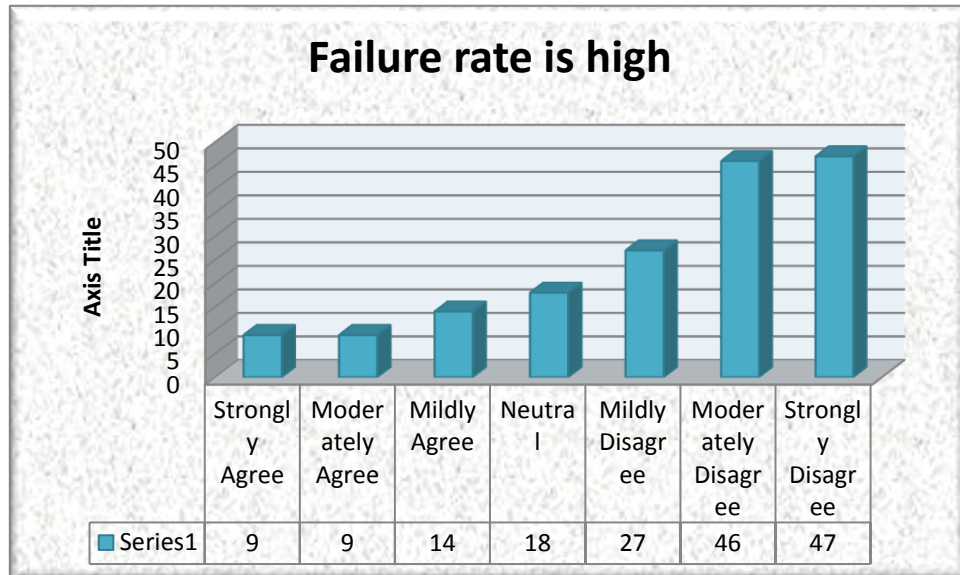


Figure 4.13: Failure rate is very high

47 respondents strongly disagreed that the failure rate of firms in the automotive industry is very high, 46 respondents moderately disagreed whilst another 27 mildly disagreed. 14 respondents mildly agreed and another 18 equally strongly and moderately agreed. 18 respondents were neutral on the question. Therefore, the majority of respondents (120) disagreed that the failure rate of firms in the automotive industry is very high and the minority of respondents (32) agreed that the failure rate of firms in the automotive industry is very high.

4.4.2 Industry is Very Risky

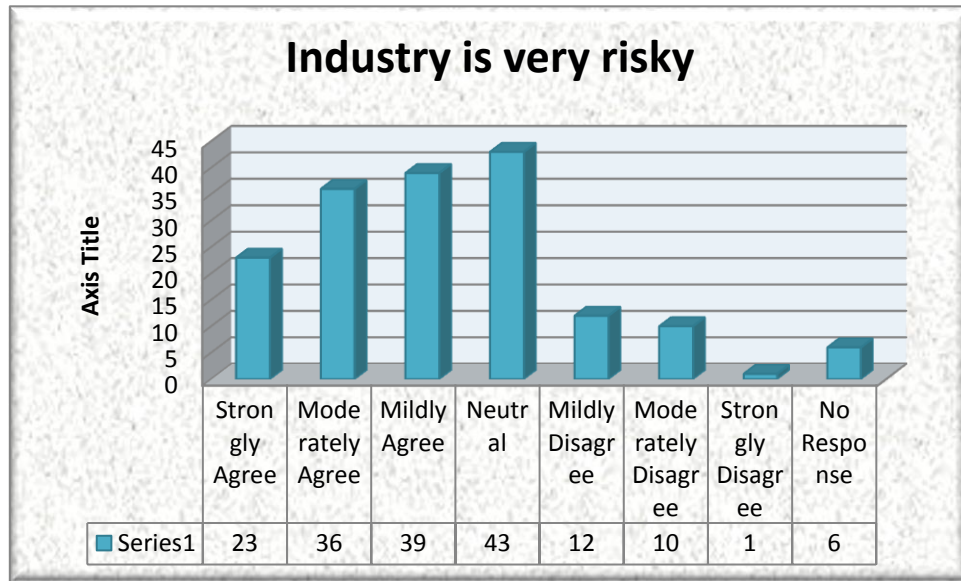


Figure 4.14: Industry is very risky

The majority of respondents agreed that the industry is very risky (39 mildly agreed, 36 moderately agreed and 23 strongly agreed), whilst the minority of respondents (23) disagreed that the industry is very risky (12 respondents mildly disagreed, 10 moderately disagreed and 1 strongly disagreed). 43 respondents were neutral on this question and 6 did not answer the question.

4.4.3 Competitive Intensity is high

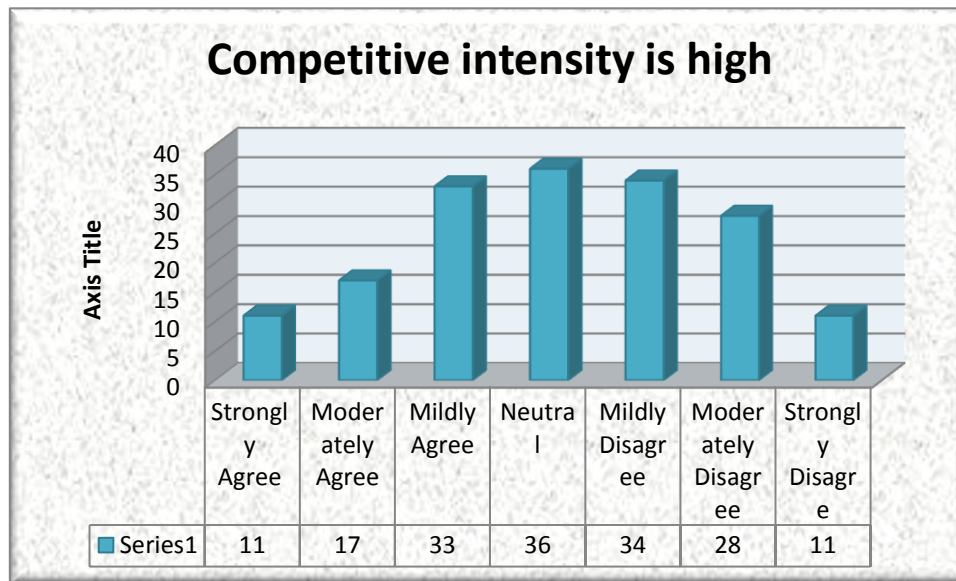


Figure 4.15: Competitive intensity is high

There were an equal number of respondents (11) who strongly agreed with those who strongly disagreed (11). 17 respondents moderately agreed and 33 mildly agreed, whereas 28 moderately disagreed and 34 mildly disagreed. 36 respondents were neutral on the question. Therefore, the majority of the respondents (73) disagreed that competitive intensity is high in the industry, whereas the minority agreed with this (61).

4.4.4 Customer Loyalty is Low in the Industry

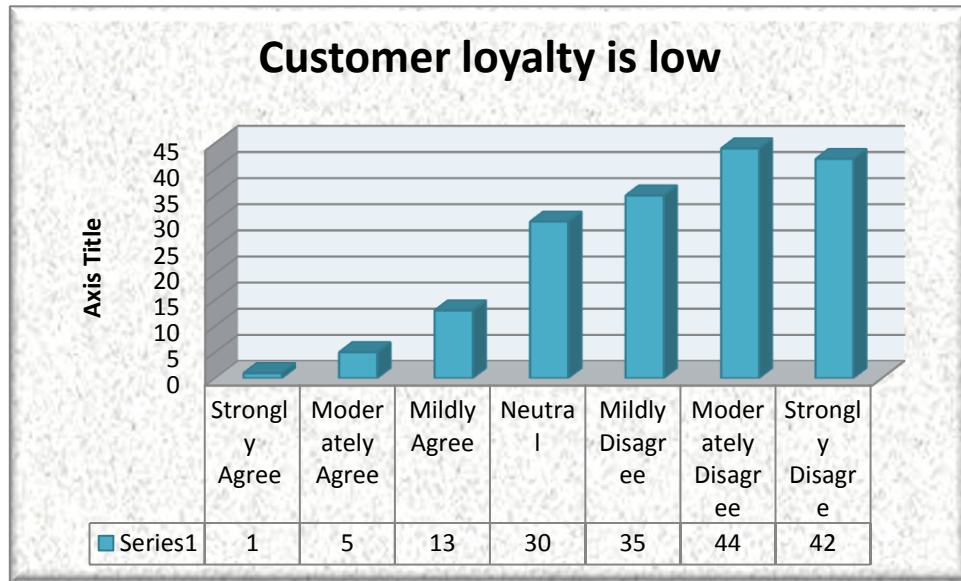


Figure 4.16: Customer loyalty is low in the industry

Majority of the respondents (121) disagreed that customer loyalty is low in the automotive industry as 42 of them stated that they strongly disagree, 44 stated that they moderately disagree and 35 stated that they mildly disagree. The minority of respondents (19) agreed that customer loyalty is low in the industry as only 1 of them stated that they strongly agree, 5 stated that they moderately agree and 13 stated that they mildly agree. 30 respondents were neutral.

4.4.5 Severe Price Wars are Characteristic of this Industry

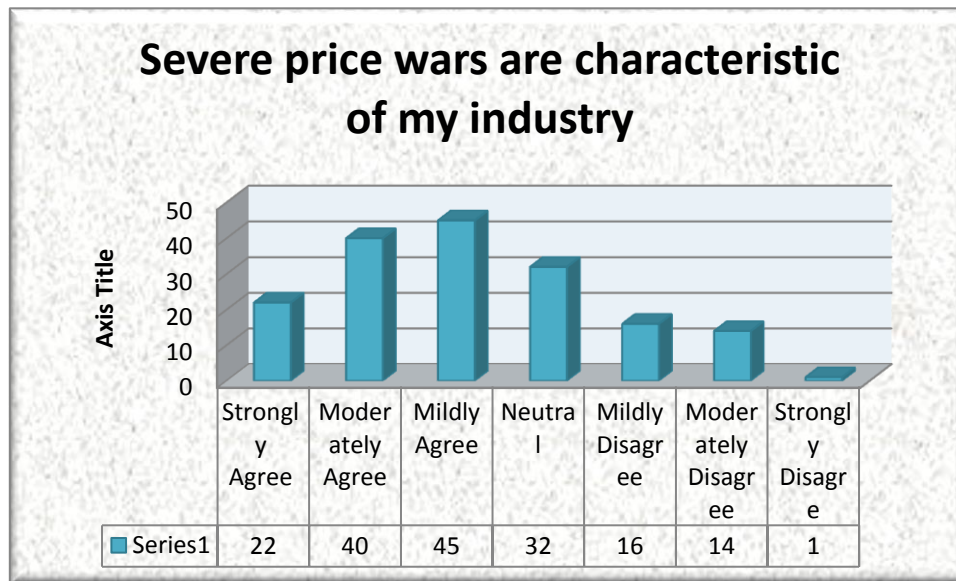


Figure 4.17: Price Wars

Majority of respondents (107) agreed that severe price wars are characteristic of the automotive industry as 22 of them stated that they strongly agree, 40 moderately agree and 45 stated that they mildly agree. The minority of respondents (31) disagreed that severe price wars are characteristic of their industry as only 1 of them strongly disagreed, 14 moderately disagreed and 16 mildly disagreed with this. 32 respondents were neutral on this question.

4.4.6 Low Profit Margins are Characteristic of my Industry

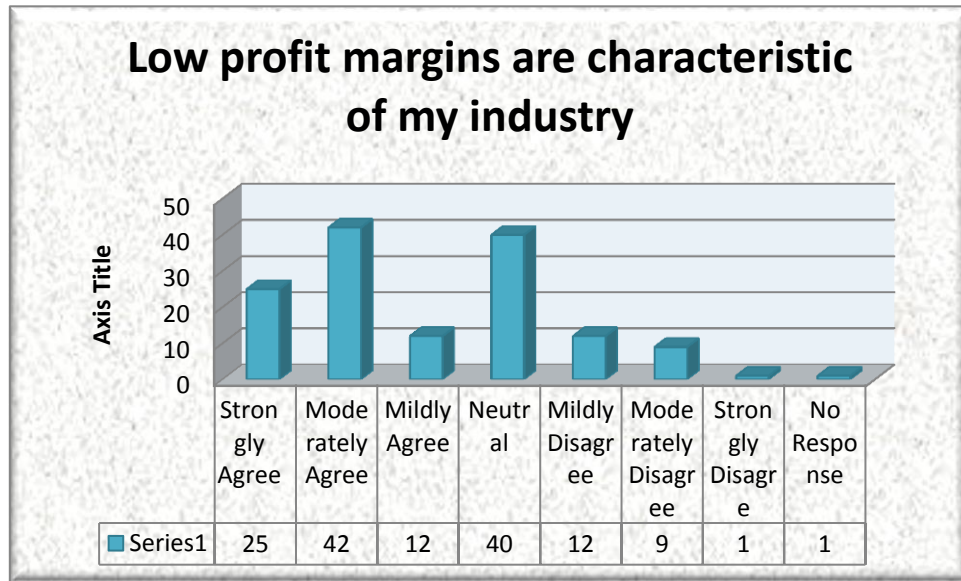


Figure 4.18: Low profit margins

Majority of respondents (79) agreed that low profit margins are characteristic of the automotive industry as 25 of them strongly agreed, 42 moderately agreed and 12 mildly disagreed with this. The minority of respondents (22) disagreed that profit margins are characteristic of the automotive industry as only 1 of them strongly disagreed, 9 moderately disagreed and 12 mildly agreed with this. 40 respondents were neutral and 1 did not answer this question.

4.4.7 Actions of Competitors are Easy to Predict

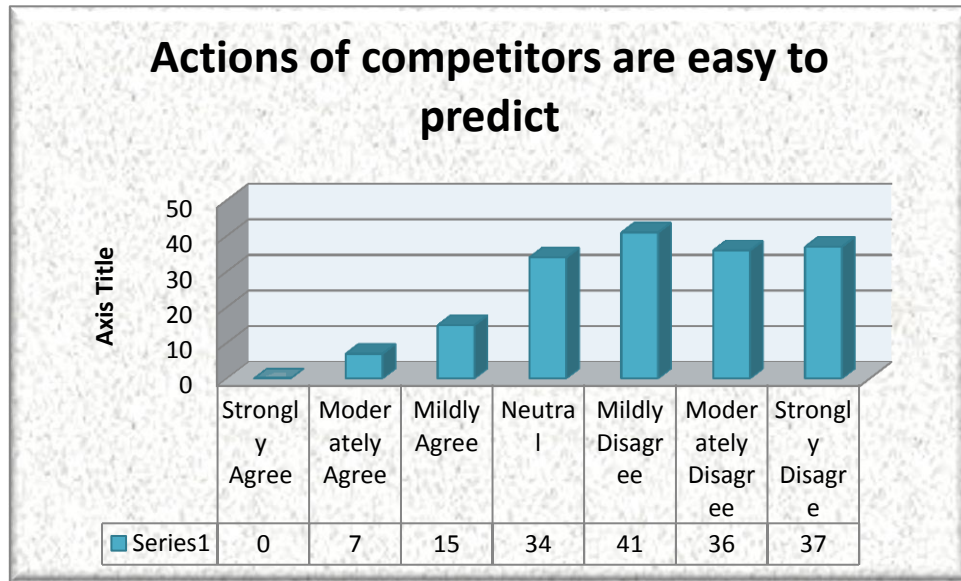


Figure 4.19: Action of competitors

Majority of respondents (114) disagreed that the actions of competitors are easy to predict as 37 of them strongly disagreed, 36 moderately disagreed and 41 mildly disagreed with this. The minority of respondents (22) agreed that the actions of competitors are easy to predict as only 7 moderately agreed and 15 mildly agreed. 34 respondents were neutral on this question.

4.4.8 Set of Competitors Have Remained Relatively Constant

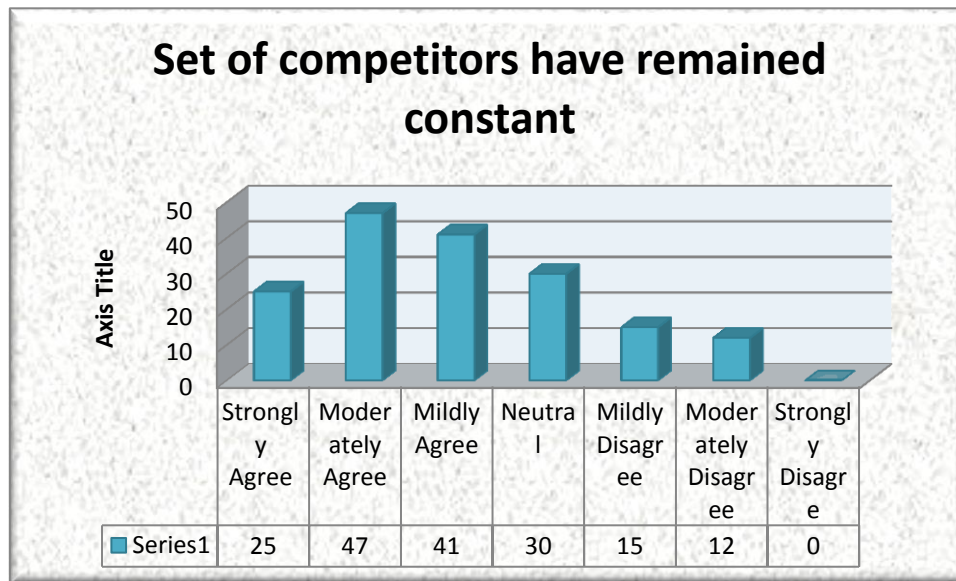


Figure 4.20: Competitors have remained the same

Majority of respondents (113) agreed that the set of competitors in the automotive industry have remained constant as 25 of them strongly agreed, 47 of them moderately agreed and 41 mildly agreed. 30 respondents were neutral on the question. The minority of respondents (27) disagreed that competitors in the automotive industry have remained constant as only 12 moderately disagreed and 15 mildly disagreed.

4.4.9 Product Demand is Easy to Predict

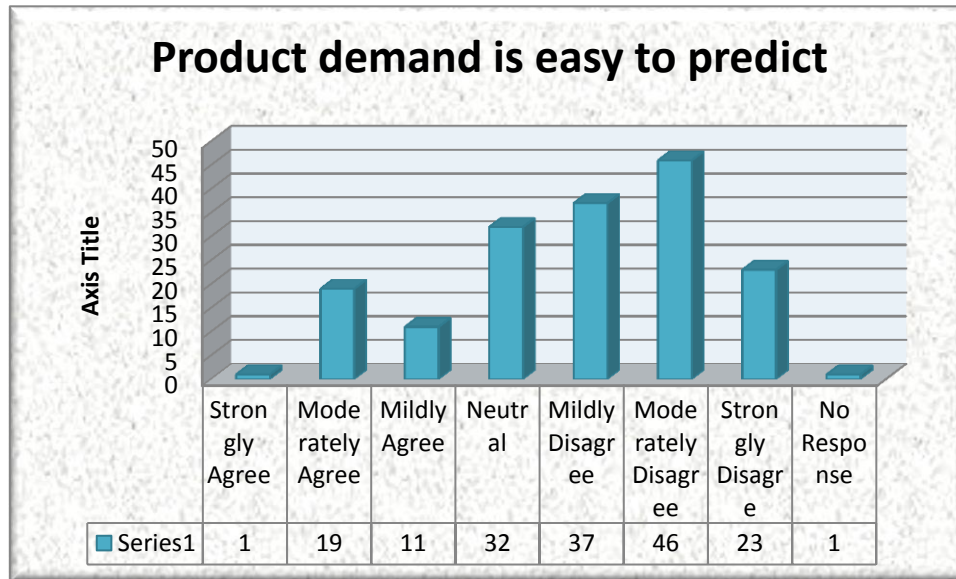


Figure 4.21: Product demand

Majority of respondent (106) seemed to disagree that it is easy to predict product demand in the automotive industry as 23 of them strongly disagreed, 46 moderately disagreed and 37 mildly disagreed. 32 respondents were neutral on the question and 1 of them did not answer the question. It was the minority of respondents (31) who agreed that it is easy to predict product demands in the industry as only 1 of them strongly agreed, 19 moderately agreed and 11 mildly agreed.

4.4.10 Customer requirement or Preferences are Easy to Forecast

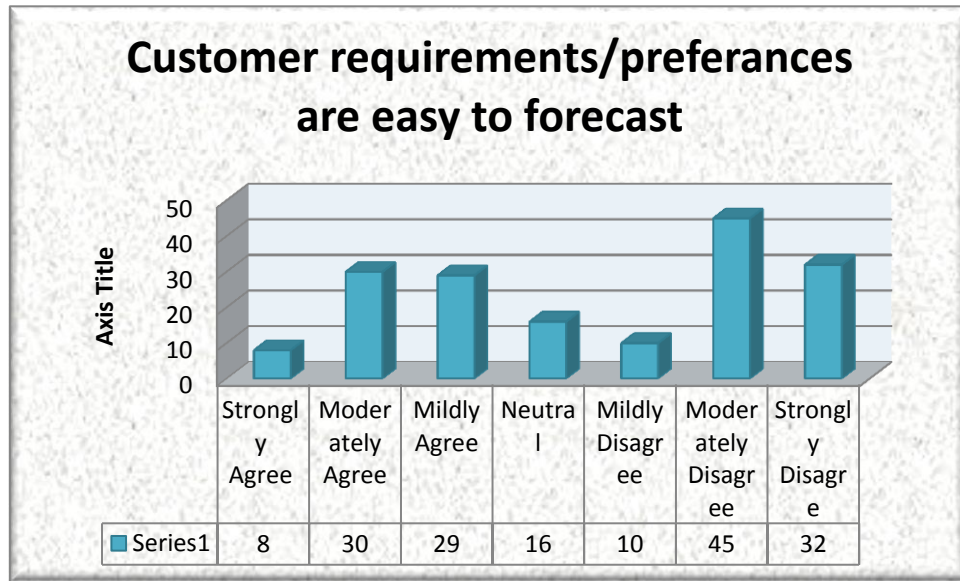


Figure 4.22: Customer requirement/preferences

Majority of respondents (87) disagreed that it is easy to forecast customer requirements or preferences as 32 of them strongly disagreed, 45 moderately disagrees and 10 mildly disagreed. 16 respondents were neutral on the question. Only a minority of 67 respondents agreed that it is easy to forecast customer requirements or needs as 8 of them strongly agreed, 30 moderately agreed and 29 mildly agreed with this.

4.4.11 Automotive Industry is Very Stable

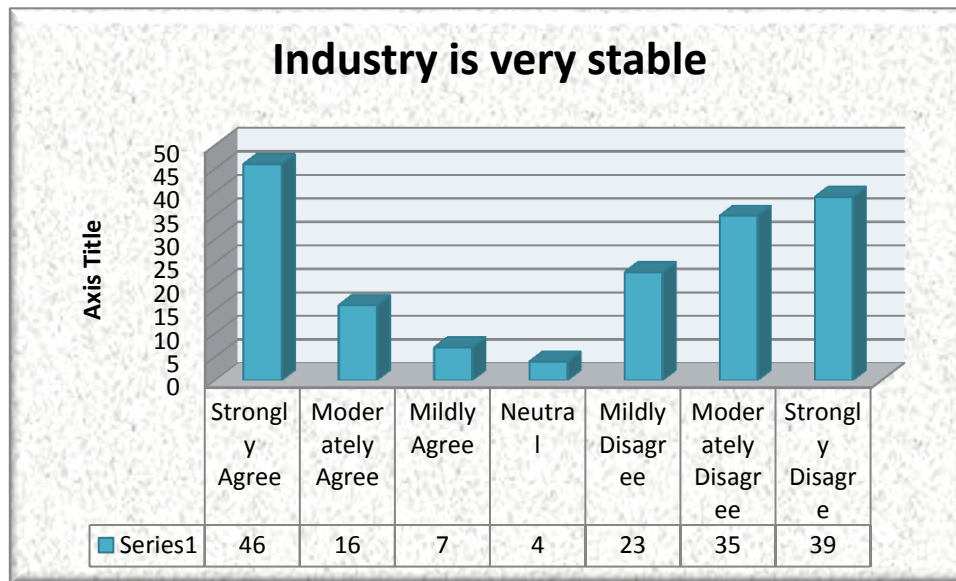


Figure 4.23: Automotive industry is very stable

Majority of respondents (97) disagreed that the automotive industry is stable with very little change resulting from major economic, technological, social, or political forces as 39 of them strongly disagreed, 35 moderately disagreed and 23 mildly disagreed with this. 4 respondents were neutral on the question. The minority made up of 69 respondents agreed that the automotive industry is stable with very little change resulting from major economic, technological, social, or political forces as 46 of them strongly agreed, 16 moderately agreed and 7 mildly agreed.

4.5 Frequency

4.5.1 Can you please reflect on the degree of product development in your firm?

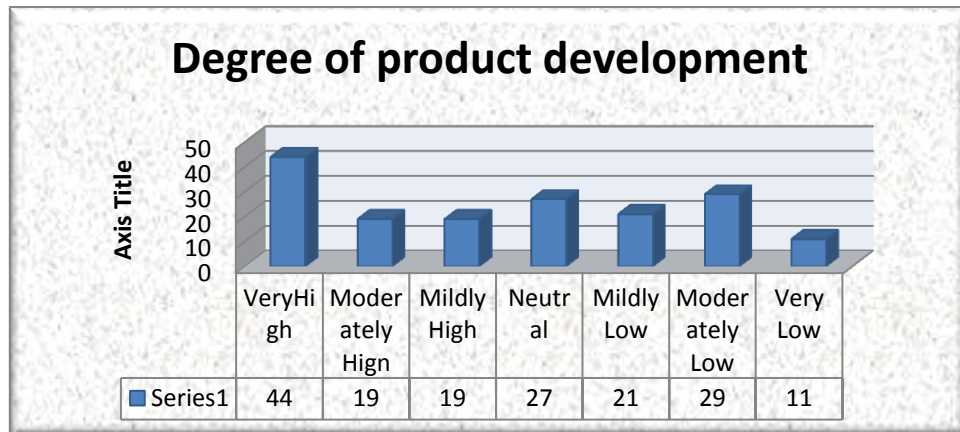


Figure 4.24: Degree of Development

Majority of respondents (82) indicated that the degree of product development in the automotive industry is high as 44 of them indicated that it is very high, 19 stated that it is moderately high and 19 indicated that it is mildly high. 27 respondents were neutral on this question. The minority of respondents (61) indicated that the degree of product development is low as only 11 of them indicated that it is very low, 29 indicated that it is moderately low and 21 indicated that it is mildly low.

4.5.2 What is the degree of business processes development?

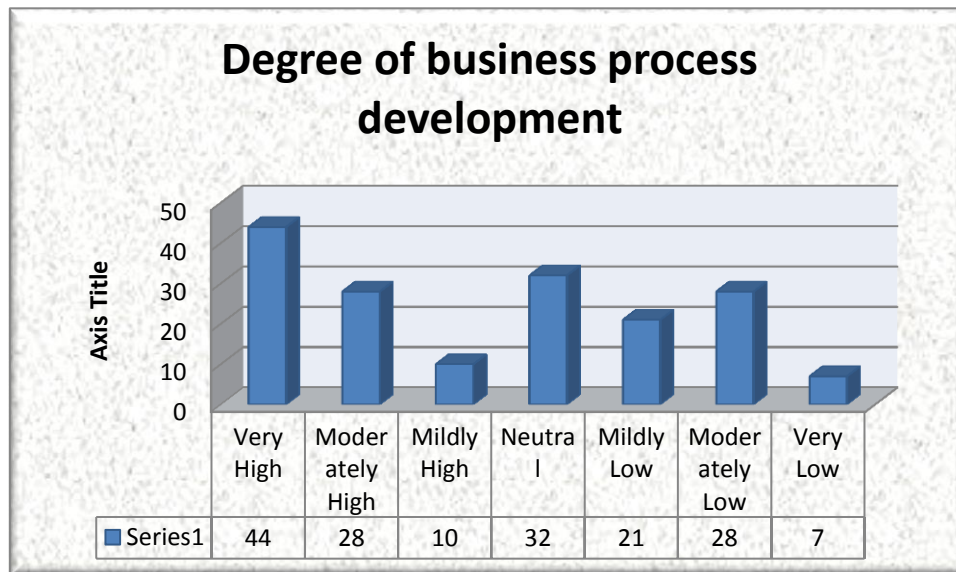


Figure 4.25: Degree of business process development

Majority of respondents (82) indicated that the degree of business process development was high as 44 of them indicated it to be very high, 28 indicated that it is moderately high and 10 indicated that it is mildly high. 32 respondents were neutral on this question. The minority of respondents (56) stated that the degree of business process development is low as only 7 of them indicated that it is very low, 28 indicated that it is moderately low and 21 stated that it is mildly low.

4.5.3 What is the frequency of innovation in your firm?

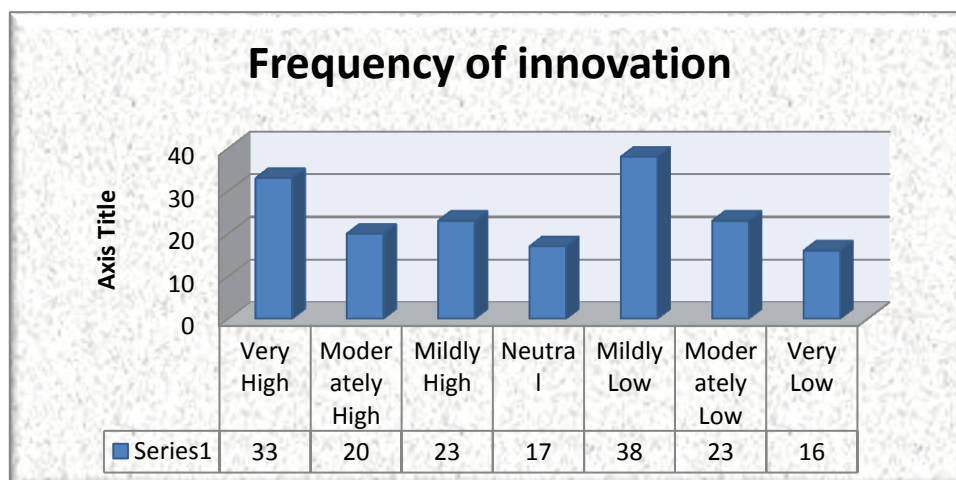


Figure 4.26: Frequency of innovation

The number of respondents who stated that the frequency of innovation in their firm was high (76) were about the same number of those that stated that it is low (77). 33 respondents stated that it is very high, 20 stated that it is moderately high and 23 stated that it is mildly high. 17 respondents were neutral on this question. 16 respondents stated that the frequency of innovation in their firm is very low, 23 stated that it is moderately low and 38 stated that it is mildly low.

4.5.4 How often does your company introduce new product in the market?

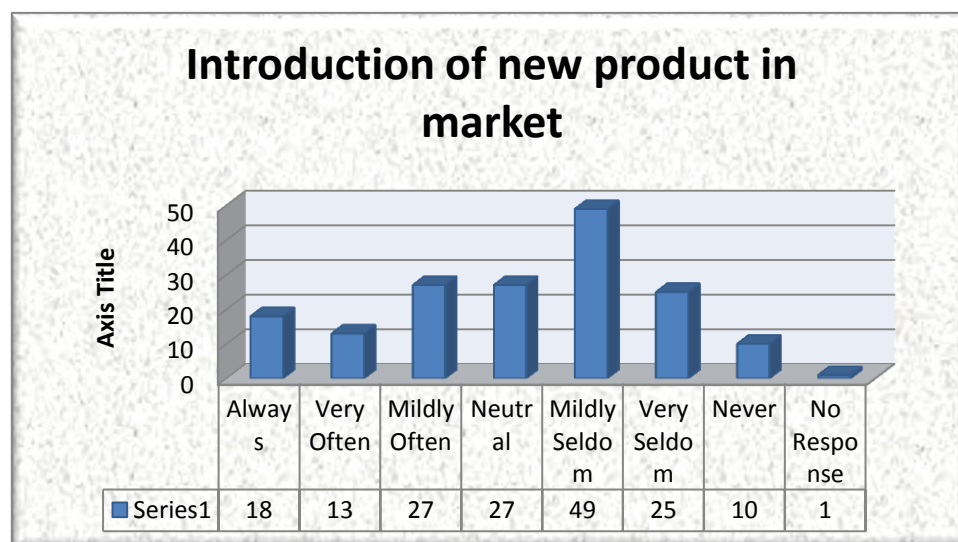


Figure 4.27: Introduction of new product

Majority of respondents (84) stated that their companies seldom, if ever, introduce new products in the market as 10 of them stated that their companies never introduce new products in the market, 25 stated that their companies very seldom introduce new products in the market and 49 stated that their company mildly seldom ever introduce new products in the market. 27 respondents were neutral on the question and only 1 did not answer the question. The minority of respondents (58) stated that their companies introduce new products in the market quite often as 18 of them stated that their companies always introduce new products in the market, 13

stated that their companies introduce new products in the market very often and 27 stated that their companies introduce new products in the market mildly often.

4.5.5 How many new lines of products has your firm marketed since 2013? No new lines of products or service

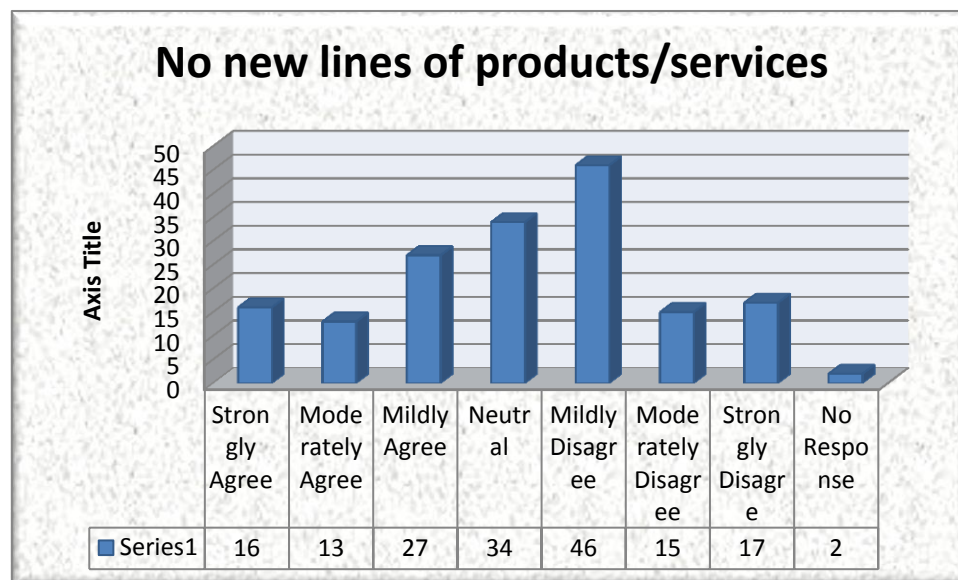


Figure 4.28: No new lines of products/services

Majority of respondents (78) disagreed that their firms marketed no new lines of products or services since 2013 as 17 of them strongly disagreed, 15 moderately disagreed and 46 mildly disagreed. 34 respondents were neutral on the question and 2 did not answer the question. The minority of respondents (57) seemed to agree that their firms marketed no new lines of products or services since 2013 as 16 of them strongly agreed, 13 of them moderately agreed and 27 of them mildly agreed.

4.5.6 *Changes in product or service lines have mostly been of a minor nature*

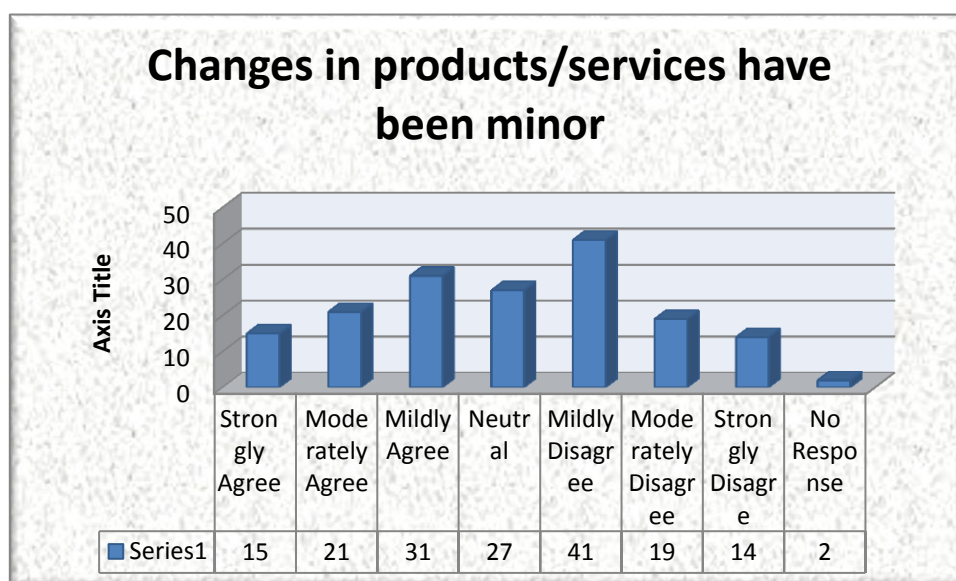


Figure 4.29: Changes in products or services

Majority of respondents (74) disagreed that changes in products or services in their firms have been minor since 2013 as 14 of them strongly disagreed, 19 moderately disagreed and 41 mildly disagreed. 27 respondents were neutral and 2 did not answer the question. Minority of respondents (67) agreed changes in products and services in their firms have been minor since 2013 as 15 of them strongly agreed, 21 moderately agreed and 31 mildly agreed.

4.6 Measurement scale

4.6.1 Scale Validity

Table 4.2 shows the Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO). All the KMO values were greater than the minimum required value of 0.5. This implies that the sample was enough to conduct factor analysis. The Bartlett's Test of Sphericity had p-values less than 0.05 as required.

Table 4.2: KMO and Bartlett's Test

Entrepreneurial Intensity		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.754
Bartlett's Test of Sphericity	Approx. Chi-Square	902.766
	df	66
	Sig.	.000
Entrepreneurial Orientation		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	570.947
	df	36
	Sig.	.000
Frequency		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.820
Bartlett's Test of Sphericity	Approx. Chi-Square	518.070
	df	6
	Sig.	.000
Environmental scales Environmental hostility		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.563
Bartlett's Test of Sphericity	Approx. Chi-Square	202.782
	df	15
	Sig.	.000

The composition for each of the constructs is shown in table 4.3. The table presents the constructs, the items within each construct, the factor loading for each item, total variance explained and the Cronbach's Alpha test for reliability.

Table 4.3: Validity and Reliability

Construct	Sub-construct	Item	Factor 1	Factor 2	Factor 3	Total Variance Explained	Cronbach's Alpha
Entrepreneurial Intensity	Innovation	C9 EII2	.864	.094	.255	68%	.842
		C11 EII4	.835	-.037	.088		
		C8 EII1	.827	-.079	.252		
		C10 EII3	.722	-.034	.170		
	Risk taking	C17 EIRT	.020	.869	-.069		.867
		C16 EIRT	-.095	.840	.110		
		C18 EIRT	.033	.835	-.042		
		C19 EIRT	-.010	.812	-.045		
	Proactiveness	C15 EIP	.207	-.006	.828		.757
		C14 EIP	.041	-.197	.796		
		C12 EIP	.321	.166	.703		
		C13 EIP	.397	.021	.553		
Entrepreneurial Orientation	EO Factor 1	D25 EO9	.807	.093		57%	.845
		D24 EO8	.807	.084			
		D23 EO7	.716	.215			
		D22a EO4	.675	.340			
		D22c EO6	.668	.290			
		D22b EO5	.656	.133			
	EO Factor 2	D21b EO3	-.006	.853			.579
		D20 EO1	.271	.683			
		d21a EO2	.444	.527			
Frequency		F39 Freq3	.924			81%	.919
		F37 Freq1	.922				
		F38 Freq2	.900				
		F40 Freq4	.840				

Environmental hostility	Factor 1	C19	.732	.059		60%	.644
		C16	.670	.336			
		C17	.661	-.609			
		C18	.619	-.412			
	Factor 2	C15	-.100	.789			.448
		C20	.218	.696			

The results show that Entrepreneurial Intensity retained the initially hypothesised three sub-constructs namely; Innovation, Risk-taking and Proactiveness each with four items. The three factors explained 68% of variation in the items.

The Entrepreneurial orientation construct retained two factors, which explained 57% of variation in the nine items. The sub-constructs were named Entrepreneurial orientation factor 1 and Entrepreneurial orientation factor 2.

The Frequency construct retained one factor which had all the items within the initially hypothesised construct. The factor explained 81% of variation in the items.

Environmental hostility retained two factors which explained a total of 60% variation in the items.

4.6.2 Scale Reliability

Cronbach's Alpha was used to assess the reliability (Internal consistency) of the scale. The classification is based on the values as shown in table in table 4.3.

Table 4.4: Cronbach's Alpha Classification

Cronbach's Alpha Value	Reliability Level
>0.9	Excellent
>0.8	Good
>0.7	Acceptable
>0.6	Questionable
>0.5	Poor
<0.5	Unacceptable

The Cronbach's Alpha values shows that the Frequency construct ($\alpha = 0.919$) had an excellent level of reliability since the Cronbach's Alpha value was greater than 0.9. Innovation ($\alpha = 0.842$), Risk-taking ($\alpha = 0.867$), and the Entrepreneurial orientation factor 1 ($\alpha = 0.845$) had good level of reliability ($\alpha > 0.8$).

The constructs Proactiveness ($\alpha = 0.757$) and Environmental dynamism ($\alpha = 0.745$) had acceptable levels of reliability while the reliability for Environmental hostility factor 1 ($\alpha = 0.644$) had questionable reliability.

Entrepreneurial orientation factor 2 1 ($\alpha = 0.579$) had a poor reliability level while Environmental hostility factor 2 (0.448) had an unacceptable level of reliability.

All the constructs that had a Cronbach's Alpha value greater than 0.5 had a summated scale computed for each construct. The summated scale was calculated by finding an average of the items within the construct. The descriptive statistics and correlation between the constructs are shown in table 4.5 and table 4.6.

4.7 Squared multiple correlations

Chi-squared test and correlation tests were conducted on the different variables in the study and the results thereof are presented in the following section.

Table 4.5: Descriptive Statistics

	Descriptive Statistics	
	Mean	Std. Deviation
Proactiveness	4.18	.609
Innovation	4.16	.637
Risk-taking	3.51	.852
Environmental Hostility	3.95	1.34
EO - Factor1	5.03	1.08
EO - Factor2	4.69	1.22
Frequency	3.73	1.72

The descriptive statistics shows that EO – Factor1 (mean = 5.03) was the highest rated construct followed by EO – Factor2 (mean = 4.69).

Table 4.6: Pearson's Correlation

	Innovation	Proactiveness	Risk Taking	Environmental Hostility	Environmental Dynamism	EOFactor1	EOFactor2	Frequency
Innovation	1							
Proactiveness	.512**	1						
Risk-taking	.004	.020	1					
Environmental Hostility	.171*	.186*	-.432**	1				
EOFactor1	.212**	.194*	.410**	-.222**	.289**	1		
EOFactor2	.321**	.335**	.287**	.003	.035	.523**	1	
Frequency	.187*	.147	-.556**	.594**	-.618**	-.276**	.012	1

The results show that there is positive and significant correlation between Frequency and each of Innovation ($r = 0.187$, $p\text{-value} < 0.05$) and Environmental Hostility ($r = 0.594$, $p\text{-value} < 0.01$). This is because the correlation coefficients were positive and the p -values were less than 0.05.

There was however a significant negative association between Frequency and each of Risk Taking ($r = -0.556$, $p\text{-value} < 0.01$), and EO Factor1 ($r = -.276$, $p\text{-value} < 0.01$). This is because the correlation coefficients were less than zero and the p -values were less than 0.05.

Proactiveness ($r = 0.147$, $p\text{-value} > 0.05$) and EO Factor2 ($r = 0.012$, $p\text{-value} > 0.05$) were however not related to frequency since the p -values were greater than 0.05.

A path analysis model shown below was fitted to test the hypotheses. The results in Table 4.8 show the squared multiple correlations for all the dependent variables.

Table 4.7: Squared Multiple Correlations

	Estimate
Risk Taking	.335
Proactiveness	.036
Innovation	.033
EO_Factor2	.163
EO_Factor1	.189
Frequency	.155

The squared multiple correlations table shows that environmental hostility explains 33.5% of variation in risk taking, 3.6% of variation in proactiveness and 3.3% in innovation. It can also be noted that Innovation, Proactiveness and Risk taking explained 18.9% of variation in entrepreneurial orientation factor 1 and 16.3% of variation in entrepreneurial orientation factor 2. Entrepreneurial orientation factor 1 and entrepreneurial orientation factor 2 explained 15.5% of variation in Frequency.

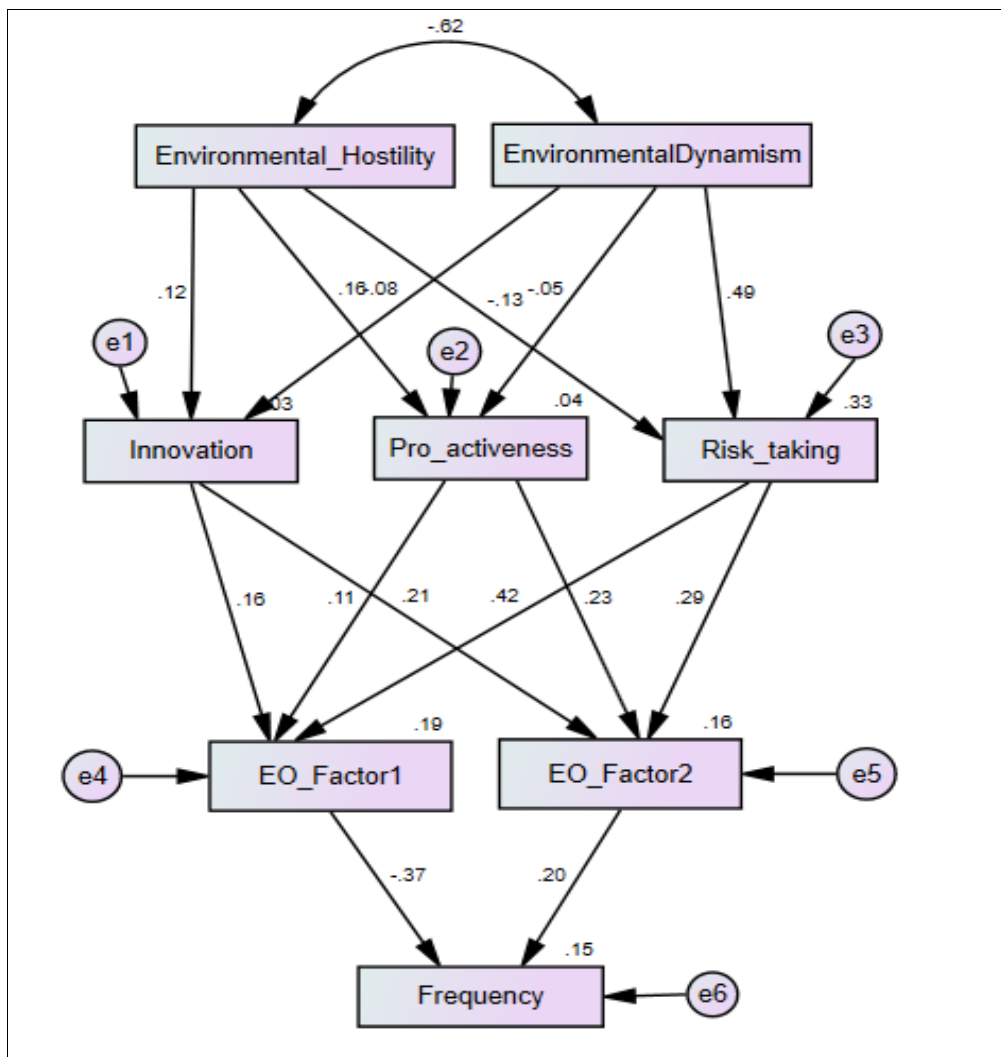


Figure 4.4: Path diagram

The path diagram shows the relationship between the variables. The estimates are also summarised in Table 4.7.

Table 4.8: Regression Weights

			Un- standardised Estimate	Standardised Estimate	S.E.	C.R.	P
Innovation	<---	Environmental Hostility	0.059	0.124	0.046	1.286	0.198
Proactiveness	<---	Environmental Hostility	0.06	0.156	0.037	1.624	0.104
Risk-taking	<---	Environmental Hostility	-0.082	-0.129	0.051	-1.621	0.105
EOFactor1	<---	Innovation	0.264	0.159	0.115	2.285	0.022
EOFactor2	<---	Innovation	0.39	0.212	0.13	2.997	0.003
EOFactor1	<---	Proactiveness	0.221	0.108	0.142	1.553	0.12
EOFactor2	<---	Proactiveness	0.529	0.233	0.16	3.297	***
EOFactor1	<---	Risk-taking	0.514	0.415	0.086	5.942	***
EOFactor2	<---	Risk-taking	0.4	0.292	0.098	4.105	***
Frequency	<---	EOFactor1	-0.621	-0.371	0.12	-5.179	***
Frequency	<---	EOFactor2	0.305	0.202	0.108	2.826	0.005

The regression weights are the ones that were used to answer the hypotheses. The relationship between two variables is significance if the p-value is less than 0.05. The direction of the relationship, whether negative or positive is indicated by the sign of the regression weight. The results are summarised for each hypothesis below.

4.7.1 Findings on Hypothesis 1

Results pertaining to Hypothesis 1 (H1): Entrepreneurial Orientation has a positive effect on Entrepreneurial Frequency

H0: There is no relationship between Entrepreneurial Orientation Entrepreneurial Frequency.

H1: Entrepreneurial Orientation has a positive effect on Entrepreneurial Frequency.

This hypothesis was split into two sub-hypotheses since the Entrepreneurial orientation was split into two sub-constructs.

H1a: Entrepreneurial Orientation factor 1 has a positive effect on Entrepreneurial Frequency.

The results show that the relationship between Entrepreneurial Orientation factor 1 ($\beta = -0.371$, $t = -5.179$, $p\text{-value} < 0.000$) and Entrepreneurial Frequency is negative and significant. The relationship is negative since the standardised coefficient for Entrepreneurial Orientation factor 1 was negative and is significant since the p -value is less than 0.05. It is concluded Entrepreneurial Orientation factor 1 has a negative effect on Entrepreneurial Frequency. This implies that H1a is not supported.

H1b: Entrepreneurial Orientation factor 2 has a positive effect on Entrepreneurial Frequency.

The results from both path analysis and table 4.7 shows that the relationship between Entrepreneurial Orientation factor 2 ($\beta = 0.202$, $t = 2.826$, $p\text{-value} = 0.005$), is positive since the standardised coefficient for Entrepreneurial Orientation factor 2 was positive and is significant since the p -value is less than 0.05. Thus, the null hypothesis is rejected in favour of the alternative hypothesis. It is concluded that Entrepreneurial Orientation factor 2 has a positive effect on Entrepreneurial Frequency. This implies that H1b is supported.

4.7.2 Findings on Hypothesis 2

Results pertaining to Hypothesis 2 (H2): Environmental Hostility has a positive effect on Entrepreneurial intensity.

H0: There is no relationship between Environmental Hostility and Entrepreneurial intensity

H2: Environmental Hostility has a positive effect on Entrepreneurial intensity.

This hypothesis was split into three sub-hypotheses since the Entrepreneurial intensity was split into innovation, risk taking and proactiveness the hypotheses were H2a, H2b and H2c.

H2a: Environmental Hostility has a positive effect on Innovation.

The results from path analysis shows that the relationship between Innovation and Environmental Hostility ($\beta = 0.124$, $t=1.286$, $p\text{-value} = 0.198$) is not significant since the $p\text{-value}$ was greater than 0.05. Thus, the null hypothesis is not rejected and it is concluded that there is no relationship between Environmental Hostility and Innovation. This implies that H2a is not supported.

H2b: Environmental Hostility has a positive effect on Proactiveness.

The results from path analysis shows that the relationship between Proactiveness and Environmental Hostility ($\beta = 0.156$, $t=1.624$, $p\text{-value} = 0.104$) is not significant since the $p\text{-value}$ was greater than 0.05. Thus, the null hypothesis is not rejected and it is concluded that there is no relationship between Environmental Hostility and Proactiveness. This implies that H2b is not supported.

H2c: Environmental Hostility has a positive effect on Risk Taking.

The results from path analysis shows that the relationship between Risk Taking and Environmental Hostility ($\beta = -0.129$, $t=-1.621$, $p\text{-value} = 0.105$) is not significant since the $p\text{-value}$ was greater than 0.05. Thus, the null hypothesis is not rejected and it is concluded that there is no relationship between Environmental Hostility and Risk taking. This implies that H2c is not supported.

Taking H2a, H2b and H2c into account, it can be concluded that since there was no significant relationship between Environmental Hostility and any of the three Entrepreneurial intensity sub-constructs, there is no relationship between Environmental Hostility and Entrepreneurial intensity.

4.7.3 Findings on Hypothesis 3

Results pertaining to Hypothesis 3 (H3): Entrepreneurial intensity has a positive effect on Entrepreneurial Orientation.

H0: There is no relationship between Entrepreneurial intensity and Entrepreneurial Orientation

H3: Entrepreneurial intensity has a positive effect on Entrepreneurial Orientation.

This hypothesis was split into six sub-hypotheses based on the Entrepreneurial intensity split into Innovation, Risk taking and Proactiveness while Entrepreneurial orientation had two factors.

The results for the six sub-hypotheses are summarised below;

H3a. There was a positive and significant relationship between Innovation ($\beta = 0.159$, $t=2.285$, $p\text{-value} = 0.022$) and Entrepreneurial Orientation factor 1 since the standardised coefficient for Innovation was positive and was significant since the p -value was less than 0.05.

H3b. There was a positive and significant relationship between Innovation ($\beta = 0.212$, $t=2.997$, $p\text{-value} = 0.003$) and Entrepreneurial Orientation factor 2 since the standardised coefficient for Innovation was positive and the p -value was less than 0.05.

H3c. There was no significant relationship between Proactiveness ($\beta = 0.108$, $t=1.553$, $p\text{-value} = 0.120$) and Entrepreneurial Orientation factor 1 since the p -value was greater than 0.05.

H3d. There was a positive and significant relationship between Proactiveness ($\beta = 0.233$, $t=3.297$, $p\text{-value} < 0.001$) and Entrepreneurial Orientation factor 2 since the standardised coefficient for Proactiveness was positive and the p -value was less than 0.05.

H3e. There was a positive and significant relationship between Risk taking ($\beta = 0.415$, $t=5.942$, $p\text{-value} < 0.001$) and Entrepreneurial Orientation factor 1 since the standardised coefficient for Risk taking was positive and was significant since the p -value was less than 0.05.

H3f. There was a positive and significant relationship between Risk taking ($\beta = 0.292$, $t=4.105$, $p\text{-value} < 0.001$) and Entrepreneurial Orientation factor 2 since the standardised coefficient for Risk taking was positive and the p-value was less than 0.05. Since five out of the six sub-hypotheses are supported, it can be concluded that Entrepreneurial intensity has a positive effect on Entrepreneurial Orientation.

4.8 Summary

The outcomes of the study in respect of the findings from the data collection process were presented in this chapter. The demographic profile of the respondents was presented first together with some demographics of the automotive firms that were included in the study. The next chapter focuses on providing an interpretive analysis of the findings of the study.

5 CHAPTER FIVE: INTERPRETATION OF RESULTS

5.1 Introduction

In this chapter, the interpretation of the findings of the study is presented. The interpretation of the findings is made with regard to the objectives of the study as outlined in the first chapter and the interpretation is made against the findings from the literature review that was discussed in the second chapter. The objectives of the study were as follows:

- To determine if there is a significant relationship between entrepreneurial orientation and entrepreneurial frequency
- To determine if there is a relationship between environmental hostility and entrepreneurial intensity.
- To determine if there is a significant relationship between entrepreneurial intensity and entrepreneurial orientation
- To provide recommendations on entrepreneurial intensity to the Gauteng automotive industry in accordance with the findings of the study.

5.2 The extent of entrepreneurial orientation

The findings of the study seem to suggest that the firms in the automotive industry in the Gauteng province are doing quite well with regard to entrepreneurial orientation. The majority of the respondents in the study indicated that their business units possessed all the necessary components of entrepreneurial orientation; although they were doing better on some aspects compared to others. However, the firms were found to be wanting on the frequency of entrepreneurial activities as this is seemingly not as rigorous as should be, and this in turn undermines the overall entrepreneurial orientation in the firms. Morris et al. (2001) had defined entrepreneurial orientation as attitudinal as it has to do with individuals in a corporate environment being able and proactive to embrace newness and change. This phenomenon is seemingly not a challenge in the automotive industry. For example,

the majority of the respondents in the study stated that their top managers in their firms favour strong emphases on technological leadership and innovation; they stated that their business units have marketed many new lines of products and services and those changes have been quite dramatic in their business units. It was only the minority of respondents who stated that this was not prevalent in their business units.

Miller (1983) stated that companies which embrace entrepreneurial orientation are upbeat and daring when it comes to dealing with competition suggesting that such companies are proactive in setting new trends and dictating the pace and that they are not fearful of competition. Again, the majority of the respondents in the study seemed to think that this was the case in their firms. They stated that their firms are typically initiators of actions to which competitors respond; that their firms are usually the introducers of new products and services; and that their firms do not cower at the competition, but usually adopt a competitive posture. The aspect of competitiveness in the corporate environment was also emphasised by Dess (1996) where strong references were made to companies being aggressive in their competitiveness. Again, the majority of respondents indicated that their business units typically adopt a bold, aggressive posture in order to maximise the probability of exploiting potential opportunities.

Entrepreneurial orientation also touches on the aspect of risk-taking looking at the fact the company has to be able to take some risks in the corporate environment in order for there to be success (Miller, 1983; Lumpkin & Dess, 1996). Risk-taking is seemingly not much of a challenge as well with regard to most business units in the automotive industry as the majority of the respondents indicated that their business units have a strong proclivity for high-risk projects.

5.3 Environmental hostility

The corporate environment has much influence on companies' entrepreneurial intensity and the more hostile the corporate environment is; the more entrepreneurial intense companies will be (Yusuf, 2002; Khandawalla, 1977; Foxall, 1984; Covin &

Slevin, 1989; Zahra & Bogner, 1999). The corporate environment in the automotive industry seems to have, to a large extent, some elements of hostility which favour entrepreneurial intensity. For example, the majority of the respondents in the study stated that they believed that the automotive industry is very risky and that there are severe price wars and low profit margins.

However, there are other imperative aspects of the environment which are seemingly not as intense as they should be in order to foster more entrepreneurial intensity. For example, the majority of respondents disagreed that the failure rate in the automotive industry is high; they did not think that the competitive intensity in the industry is high; and they believed that they are enjoying much loyalty from their customers. Although all of these factors may be favourable on the part of the business units, they may lead to a lax kind of approach and attitude towards the corporate environment where there is not much tendency towards innovation and change, ultimately affecting the entrepreneurial intensity of these business units.

The other aspect of the corporate environment in the automotive industry that would favour its entrepreneurial intensity is that it is not predictable. According to Venter (2013), if a corporate environment is predictable, the role players in it would be reluctant to take risks, be innovative or engage in new business ventures. The majority of the respondents in the study indicated that the corporate environment in the automotive industry is not predictable as they stated that actions of competitors are not easy to predict, product demands are not easy to forecast, and customer demands or preferences are also not easy to forecast. This situation fosters entrepreneurial intensity as business units would remain vigilant at all times trying to constantly evolve and be a step ahead of their competitors. Again, the majority of the respondents believed that the automotive industry is not immune to changes influenced by technological, social and political and economic forces; but believed that the industry is unstable.

5.4 Frequency

The frequency of the entrepreneurial activities or events in a firm, say much about the overall entrepreneurial intensity of that firm (Eramus & Scheepers, 2008). Firms in the Gauteng automotive industry are seemingly not as vigorous in their implementation of entrepreneurial activities or events. There were about as many respondents in the study who stated that the frequency of innovation in their firms is high as those who stated that it is low. The majority of the respondents also stated that their firms seldom, if ever, introduce new products in the market. This shows that firms in the automotive industry could have room for improvement in this regard.

Degree of entrepreneurship refers to the level to which entrepreneurship is consistent with innovation, risk-taking and proactiveness (Eramus & Scheepers, 2008). The majority of respondents seemed to think that their business units were quite proactive as they stated that the degrees of product development and business process development are high in their business units. They also stated that their business units marketed new lines of products and services, and those changes in their product and service lines have been dramatic since 2013. This shows their positivity towards risk-taking.

5.5 Discussion of Hypothesis 1

Hypothesis 1 (H1): Entrepreneurial Orientation has a positive effect on Entrepreneurial Frequency

The study also found that there is a significant relationship between entrepreneurial orientation and frequency. As discussed above, entrepreneurial orientation is on an attitude level as it has to do with individuals' ability and openness to embrace change. This then explains why entrepreneurial orientation would have an influence on the frequency at which they participate in entrepreneurial activities or events.

5.6 Discussion of Hypothesis 2

Hypothesis 2 (H2): Environmental Hostility has a positive effect on Entrepreneurial intensity.

The study found that there was no relationship between environmental hostility and innovation, proactiveness and risk taking which make up entrepreneurial intensity. This means that the level to which the automotive firms are innovative, proactive and take risks is not determined by the environment in which they operate; rather these activities are stimulated by factors other than their environment. However, the study found that there is no relationship between environmental dynamism and innovation and proactiveness. However, there is a relationship between environmental dynamism and risk taking. Environmental dynamism has to do with the level to which preferences of customers and products or services of organisation change over time (Wijbenga & van Witteloostuijn, 2007). This means that the unstable but dynamic nature of the environment in the automotive industry does influence the level to which firms are willing to take risks.

5.7 Discussion of Hypothesis 3

Hypothesis 3 (H3): Entrepreneurial intensity has a positive effect on Entrepreneurial Orientation.

The study also found that there is a significant relationship between entrepreneurial orientation and the various components of entrepreneurial intensity – innovation, proactiveness and risk-taking which make up entrepreneurial intensity. This means that the level to which automotive firms are innovative and proactive in bringing about new products and services, administrative techniques and new technologies; and the level to which they are able to take risks determine if they embrace an entrepreneurial orientation or not. Furthermore, the more the firms engage in these activities, the higher entrepreneurial intensity is in them.

5.8 Summary

An interpretive analysis of the findings of the study was provided in this chapter. The analysis was provided in relation to the overall objective of the study. They were also discussed against the literature on the topic that was presented in chapter 2. In the following chapter the research draws some conclusions on the study and provides some recommendations.

6 CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

As the findings of the study have been presented and a discussion of the interpretation of the same has been provided, the researcher now draws conclusions on the main aspects of the study in relation to the goal and objectives of the study after discussing the main findings. Thereafter, recommendations following the findings are offered. The researcher also discusses the limitations of the study and lastly, recommendations are made for further research on entrepreneurial intensity.

6.2 Conclusion on Demographics

A conclusion can be drawn from the demographic profile of the respondents in the study that the automotive industry in the Gauteng province is male dominated as individuals from different firms, designated in different sections were included in the study and the majority of them (66%) were male. All the respondents in the study were young people between the ages of 21 year and 35 years. However, this does not suggest that the automotive industry in the province is dominated by youths and does not have any adults and elder persons. This was just a result of the respondents that participated in the study.

Another conclusion can be drawn that the industry draws on and values highly the knowledge and expertise of individuals who have obtained tertiary qualifications as the majority of the respondents in the study had a college qualification (39%) or a university qualification (29%). The respondents in the study were made up of more individuals from management positions as there were strategic questions during the data collection process that could only be answered by managers.

6.3 Conclusion on findings

The overall goal of the study was stated as follows:

- To measure entrepreneurial intensity in the automotive industry in the Gauteng province.

A conclusion can be drawn that entrepreneurial intensity exists in the automotive industry in the Gauteng province as the majority of respondents in the study indicated that their firms have practiced the factors that indicate entrepreneurial orientation. For example, the majority of respondents stated that their top managers favour research and development technological leadership and innovation over marketing tried and true products; they stated that their firms have marketed many new lines of products or services; and they stated that there have been drastic changes in products and services in their firms. It was also the majority of respondents who stated that their firms usually initiate actions which competitors respond to and their firms are usually the ones to introduce new products or services, and that their firms have the bold and aggressive stature necessary to withstand their competitors.

It can also be concluded that the environment of the automotive industry in the province is hostile and dynamic enough to invoke some entrepreneurship in the industry, although this could still be enhanced even more as it is still lacking in some aspects. However, the study found there was no significant relationship between environmental hostility and entrepreneurial intensity. It can therefore be concluded that the entrepreneurial intensity in the automotive industry is not influenced by the environment in which it exists but rather it is influenced more by environmental dynamism which has to do with changes in customer preferences and changes in products or services over time.

The study also found that there is a significant relationship between entrepreneurial orientation and innovation, proactiveness and risk taking which are the key elements of entrepreneurial intensity. This means therefore that the more individuals in the

automotive firms are willing to embrace change, the more they would be willing to engage in entrepreneurial activities such as innovation, proactiveness and risk taking within their firms.

The study found that the entrepreneurial frequency in the automotive industry in the province is not as high as desired as there were about as many respondents who indicated that the frequency was high as were those that indicated that it was low. Seemingly the degree of entrepreneurship is higher than the frequency of entrepreneurship in the automotive industry in the province.

6.4 Recommendations

The following recommendations on how entrepreneurial intensity in the automotive industry could be enhanced are made, stemming from the findings of the study.

- Firms in the automotive industry should not rely much on their environment for clues on when and how to perform their entrepreneurial activities and events as the study found that there was no significant relationship between environmental hostility and entrepreneurial intensity. Rather, firms could look to their environmental dynamism instead as the study rejected the hypothesis that there is no relationship between environmental dynamism and entrepreneurial intensity.
- Firms in the automotive industry should work on increasing their entrepreneurial predisposition as the study found that there is a significant relationship between entrepreneurial orientation and entrepreneurial intensity. This means that in order for firms to increase their innovation, proactiveness and risk taking events they need to realign their willingness and ability to embrace change.
- More attention could be given to increasing the frequency of entrepreneurial activities or events in firms within the automotive industry in the Gauteng province as this was found to be lacking.
- Firms in the automotive industry should give attention to innovation with regard to introducing new lines of products and services as this was found to be not

happening as rigorously as it should in order for there to be high entrepreneurial intensity.

6.5 Limitations of the study

The study was conducted in the Gauteng province and it focused specifically on the three metropolitan cities of the province, which are Tshwane, Johannesburg and Ekurhuleni. The study is focused on these metropolitan cities as most of the automotive industry activity happens around them. These metropolitan cities host international companies such as BMW, Nissan, Tata and Ford and ASP.

The study has sampled eight sectors of the industry, such as original equipment manufacturing, automotive components manufacture, sales, after sale statutory bodies, research, training and development institutions, and local government of Johannesburg, Tshwane and Ekurhuleni, and Entrepreneurs in the automotive sector. The research focused on both the micro and macro level, in that the firms were analysed, which led to an individual in a firm and when combining the entrepreneurial intensity sectors of the industry, it provided a macro view of the automotive industry in the Gauteng province as a whole.

6.6 Recommendations for future researches

This study only focused on determining whether entrepreneurial intensity exists in the automotive industry in the Gauteng province and on some of the factors that could contribute to effective entrepreneurship in the industry. Follow up studies could focus on determining whether entrepreneurial intensity in the industry leads to more productivity, whether it translates to more job opportunities being created in the industry.

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APPENDIX A QUESTIONNAIRE COVER LETTER

Dear Participant

I am finishing my Master's degree at The University of Witwatersrand; Johannesburg (Wits), Wits Business School and my research topics is

Measuring entrepreneurial intensity in the automotive industry in the Gauteng province

I would be thankful if you could spare about 5-10 minutes of your time to answer this questionnaire on the above mentioned topic.

Respondents can contact me if they wish to receive the results to this research.

Thank you in advance for your time and participation.

Yours sincerely,

Bongani Ngomane

APPENDIX B

ENTREPRENEURIAL INTENSITY INSTRUMENT

SECTION A: INTRODUCTION

The questions below are aimed at establishing the prevalence of entrepreneurial intensity in the Gauteng automotive industry and the extent thereof from officials designated in firms in the industry. The scale consists of three sections namely:

Section B: Demographics

Section C: Entrepreneurial Orientation and Environmental Hostility

Section D: Frequency

- Only officials whom by virtue of their work are role-players in the Gauteng automotive industry should participate in the study.
- Objective response to the questions below is significant for the study to be meaningful.
- The exercise is anonymous hence respondents' most honest opinions are solicited.
- The exercise should not take more than 20 minutes to complete.

SECTION B: DEMOGRAPHIC FACTORS

1. Male ☐ Female ☐
2. Age (years): ☐ 18-20 ☐ 21-27 ☐ 28-35 ☐ 36+
3. Qualifications: Primary School ☐ High School ☐ College ☐ University ☐
4. Current Position: _____
5. Please indicate the firm's age
6. Please indicate the size of the firm in terms of employee numbers

1. > 50	2. 50-100	3. < 100
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SECTION C: ENTREPRENEURIAL ORIENTATION (EO)

Please circle the numbers in the following scales which best describe the orientation of your business unit. Circle number “1” if the statement on the left hand side of the scale best describes your reaction to the item. Circle number “7” if the statement on your right hand side of the scale best describes your reaction to the item. Circle numbers “2” through “6” depending upon your best estimate of an intermediate position.

7. In general, the top managers of my business unit favour...								
A strong emphasis on the marketing of tried and true products or services	1	2	3	4	5	6	7	A strong emphasis on R&D, technological leadership and innovation
8. How many new lines of products or services has your business unit marketed during the past three years?								
9a. No new lines of product or services	1	2	3	4	5	6	7	Very many new lines of products or services
9b. Changes in product or service lines have been mostly of a minor nature	1	2	3	4	5	6	7	Changes in product or service lines have usually been quite dramatic
10. In dealing with its competitors, my business unit...								
10a. Typically responds to actions	1	2	3	4	5	6	7	Typically initiates actions to which

which competitors initiate								competitors then respond
10b. Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1	2	3	4	5	6	7	Is very often the first business to, introduce new products/services, administrative techniques, operating technologies, etc.
10c. Typically seeks to avoid competitive clashes, preferring a “live-and-let-live” posture	1	2	3	4	5	6	7	Typically adopts a very competitive, “undo-the-competitors” posture
11. In general, the top managers of my business unit have...								
A strong proclivity for low risk projects (with normal and certain rates of return)	1	2	3	4	5	6	7	A strong proclivity for high risk projects (with chances of very high returns)
12. In general, the top managers of my business unit believe that...								
Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour	1	2	3	4	5	6	7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
13. When confronted with decision making situations involving uncertainty, my business unit...								
Typically adopts a cautious, “wait-and-see” posture in order to minimize the probability of making costly	1	2	3	4	5	6	7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential

decisions								opportunities
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SECTION C: THE ENVIRONMENTAL SCALES

Please indicate the extent to which you agree or disagree with each statement as it applies to your business unit's principal industry (i.e., the industry that accounts for the largest percentage of your business unit's sales). The following scale applies to all items:

1 = if you strongly agree with the statement; 7 = if you strongly disagree with the statement

Circle numbers "2" through "6" depending upon your best estimate of an intermediate position.

<i>Environmental hostility</i>							
14. The failure rate of firms in my industry is high.	1	2	3	4	5	6	7
15. My industry is very risky, such that one bad decision could easily threaten the viability of my business unit.	1	2	3	4	5	6	7
16. Competitive intensity is high in my industry.	1	2	3	4	5	6	7
17. Customer loyalty is low in my industry.	1	2	3	4	5	6	7

18. Severe price wars are characteristic of my industry.	1	2	3	4	5	6	7
19. Low profit margins are characteristic of my industry.	1	2	3	4	5	6	7
<i>Environmental dynamism (Note: All items are reverse-coded.)</i>							
20. Actions of competitors are generally quite easy to predict.	1	2	3	4	5	6	7
21. The set of competitors in my industry has remained relatively constant over the last 3 years.	1	2	3	4	5	6	7
22. Product demand is easy to forecast.	1	2	3	4	5	6	7
23. Customer requirements / preferences are easy to forecast.	1	2	3	4	5	6	7
24. My industry is very stable with very little change resulting from major economic, technological, social, or political forces.	1	2	3	4	5	6	7

SECTION: D

Frequency							
25. Can you please reflect on the degree of product development in your firm	1	2	3	4	5	6	7

26.What is the degree of business processes development	1	2	3	4	5	6	7
27.What is the frequency of innovation in your firm	1	2	3	4	5	6	7
28. How often do your company introduce new product in the market	1	2	3	4	5	6	7
How many new lines of products has your firm marketed since 2013?							
29. No new lines of products or service	1	2	3	4	5	6	7
30.Changes in product or service lines have mostly been of a minor nature	1	2	3	4	5	6	7

Research planning

Time-table

Time-plan for completion of research report by March 2015

	Feb 2015	March 2015	April 2015	May 2015	June 2015	July 2015	Aug 2015
Finalise proposal	20/03						
Gain approval							
Gather data							
Do data analysis							
Write report							
Finalise report							

Consistency matrix

To measure entrepreneurial intensity in the automotive industry in the Gauteng province					
Aim of research	Literature Review	Hypotheses/ Propositions/ Research questions	Source of data	Type of data	Analysis
The purpose of the study is to research entrepreneurial intensity in the automotive industry in Gauteng.	- Kurakto, D. F, Morris, MH& Covin, J.G2011 - Scheepers, M. J.Hough, Bloom, J. Z 2007	H1a=High Entrepreneurial intensity in automotive industry leads to high profit, job creation and economic growth.	Scale and readings. Officials (management, administration, operations and sales) in the motor sector.	- Primary data - secondary data	- Statistics - Graphs - Tables - Prediction
Measure the entrepreneurial intensity in the automotive industry, in respect of job creation and transformation in Gauteng automotive industry	- Kurakto, Morris & Covin 2011 - Scheepers, Hough& Bloom 2007 - Heilbrunn 2008 - Thoumrungroje 2003	H1b=Frequency and degree of entrepreneurial activity is pivotal in measuring entrepreneurial intensity in Gauteng automotive industry.	Scale and readings. Officials (management, administration, operations and sales) in the motor sector.	- Primary data - Secondary data	- Statistics - Graphs - Tables - Prediction