Factors Influencing the Adoption of Management Accounting Practices (MAPs) by Small and Medium Enterprises (SMEs) in the Manufacturing Sector in Durban

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DECLARATION

I, Mbali Portia Msomi, declare that all material found in this dissertation authentically reflects my own contribution towards the study. A combination of in text-referencing together with a reference list has been provided to acknowledge all materials accessed during the course of this research study. I also acknowledge that this work has not been submitted concurrently nor accepted by any other institution.

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ABSTRACT

Most countries recognise small and medium enterprises (SMEs) as a key element in strengthening the economy and in reducing the high unemployment rate that is currently prevailing globally and especially in South Africa. Although these enterprises contribute significantly towards the economy, they often fail to survive beyond their start-up phase due to a number of challenges affecting their business life-cycle. These challenges stem from both internal and external factors and, if not curbed during the initial phase of the enterprise, they may cause the business to fail prematurely. Common causes of failure include, but are not limited to, difficulties encountered in gaining access to start-up capital; a lack of entrepreneurship or business management skills; a lack of appropriate business education along with a lack of any culture of innovation or of networking skills amongst their owner/managers. Finally, there is frequently a failure to adopt management accounting practices (MAPs). It is with this last issue that this research is concerned.

MAPs are techniques used to provide management with financial and non-financial information to facilitate the planning, controlling and decision making process of an organisation. These techniques are recognised to improve business performance and sustainability substantially, and the application of these techniques is often seen as determining the success or failure of an enterprise. However, there has been some concern around the adoption of MAPs amongst manufacturing SMEs, especially in the South African context. Hence, the aim of this study was to explore the critical factors influencing the adoption of MAPs by SMEs in the manufacturing sector in South Africa using a case study of businesses located in and around Durban. The aim was also to provide informative guidelines to promote the facilitation of MAP practices.

A quantitative research approach was adopted involving non-probability, purposive sampling to ensure that the relevant participants were chosen. A sample consisting of 202 participants was considered appropriate for a population with over 1050 manufacturing SMEs registered in Durban (Department of Trade and Industry report 2016/17). A questionnaire was used to collect data from the participants in the study.

A pilot test was conducted to ensure that the research instrument was adequately prepared. The data collected were analysed using the Statistical Package for the Social Sciences (SPSS) version 26.0, and the results were presented using graphs, tables and charts.

The results of the study showed that both traditional and contemporary MAPs are regarded as relevant in this changing business environment. Manufacturing SMEs still see the significance of using traditional MAPs, although with the new industrial revolution taking over globally, more sophisticated new MAPs have been implemented by several manufacturing SMEs, and this has proved more effective in their gaining a competitive edge and demonstrating innovation and thus in achieving market success. The findings of this study are therefore in a position to contribute towards promoting the adoption of appropriate up-to-date MAPs that are more technically advanced to meet current management needs.

The findings also revealed that the key internal factors identified by the respondents in this adoption process were: the owner's business experience and skills, the firm's structure, its size, and changes in the firm's size. Amongst the external factors, the results of the study showed that competition, technology, market innovation, market success, and networking with other businesses, were regarded as the predominant factors influencing the adoption of MAPs by manufacturing SMEs in the Durban area. Although the study was able to identify these critical factors influencing the adoption of MAPs, the results were limited to those views expressed by the responding stakeholders from manufacturing SMEs located in the Durban area, and therefore can only be generalised with caution.

The study recommends that both traditional and contemporary MAPs should be adopted upon the inception of a business, and that the relevant stakeholders should invest in educating themselves so that they can have a better understanding of the available MAPs, and their adoption and implementation within their business processes. The study further recommends that manufacturing SMEs identify and adopt the most appropriate MAPs to promote cost effective measures, optimise business performance and ensure sustainable growth.

The effective adoption of MAPs would also be aided if stakeholders were to make more use of government supporting agencies allowing them to benefit from further financial assistance, mentorship and training of staff.

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CHAPTER ONE: INTRODUCTION AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

The contribution of Small and Medium Enterprises (SMEs) to the economies of both developing and developed countries is considerable. SMEs include manufacturing entities whose contribution to the Gross Domestic Products (GDP) is recognised across the globe. However, the survival and sustainability of these enterprises is always in question as the majority of them are known to fail soon after their start-up phase. Their ability to adopt, or even to fully comprehend, the Management Accounting Practices (MAPs) which could be of assistance to them, is often limited and their other challenges are great. This chapter seeks to provide contextual information outlining the background to the study. It provides a problem statement, and gives the aim and objectives of the study together with the research questions. The chapter also discusses the significance of the study and provides an overview of the chapters in the dissertation.

1.2 BACKGROUND OF THE STUDY

Globally, the need for SMEs is fully recognised on account of their significant contribution to economies and in some countries their support to the government (Abor and Quartey 2010: 215; Zunckel 2018: 1). They can be regarded as the back-bone of any nation as they contribute towards the country's GDP and help fight unemployment (Statistics South Africa 2018). SMEs have no standardised definition, as they are interchangeably defined as SMEs or SMMEs depending on the country (Leopoulos, Kirytopoulos and Malandrakis 2006: 324; Smit and Watkins 2012: 6326; Makhitha 2016: 258). Amongst sectors of SMEs, manufacturing SMEs contribute greatly to the GDP in any given country, and in South Africa, these enterprises encompass over 90 percent of African-owned businesses, while

providing fifty percent of employment opportunities (World Bank 2019, Ramukumba 2014: 19).

However, there has been a downward spiral in the performance of this sector, and a 0.3 percent growth rate over the past five years indicates meagre performance, making the continued existence of many of these enterprises questionable, as they fail to innovate, grow and survive (SEDA 2019: 7). According to Omsa, Ridwan and Jayadi (2018: 75) numerous factors, including lack of education, poor business skills, inadequate training, failure to innovate, and other risk factors, including a lack of entrepreneurial expertise in applying management accounting, are acknowledged as contributing factors to SME failure. In addition, a lack of sufficient resources, inadequate management skills, insufficient guidance on credit applications, and on the adoption of MAPs were also identified as major challenges facing manufacturing SMEs (Ahmad and Mohamed Zabri 2015: 768).

The adoption of MAPs has been assessed as a critical component providing management with the information necessary to run their business operations efficiently (Ahmad, 2014: 238). In management accounting research, little has been investigated around the adoption rate of MAPs amongst manufacturing SMEs, especially in the South African context (Chenhall and Langfield-Smith 1998: 260; Msomi, Ngibe and Nyide 2019: 2; Johnson 2015: 3). According to Becker, Ulrich and Staffel (2011: 283), the slow adoption of MAPs amongst SMEs is due to the scarce resource constraints faced by such entities, the size or complexity in which they operate, and to unpredictable changes in the environment. Otley (2016: 46) highlighted the significance of MAPs as a tool that is able to provide valuable, reliable information and also to provide management with a support system in developing, planning and financial control measures. According to Yalcin (2012: 98) MAPs can be grouped according to their purpose such as planning, costing, decision making, performance appraisal, and strategic analysis. MAPs are currently considered to be crucial for efficient performance, growth and sustainability of an enterprise as well as for performing effective managerial functions (Uyar 2019: 3). Therefore, the researcher decided to explore the factors influencing the adoption of MAPs by manufacturing SMEs located in the Durban area.

1.3 PROBLEM STATEMENT

SMEs are regarded as the pioneers of the economy (Abor and Quartey 2010: 218). As in any other country, South African SMEs provide support to the government as they provide job opportunities and thus curb the high unemployment rate which is estimated at 29.1% (Statistics South Africa 2018; Trade Economics 2019). Nevertheless, these enterprises have limited survival strategies and often lose their competitive edge due a variety of constraints on their business operations (Kapkiyai and Kimitei 2016: 23; Msomi *et al.* 2019: 2). Authors such as Thomas (2014); Mungal and Garbharran (2014: 76); Doh and Kim (2014: 1559) Lekhanya (2015: 413) and Ngibe and Lekhanya (2019b: 20) reveal that SMEs often fail due to such factors as a lack of innovative knowledge, poor corporate abilities, and a lack of education and training. Snyman, Kennon, Schutte and von Leipzig (2013: 12) as cited by Lekhanya (2016: 3) claim that these shortcomings inhibit SMEs from obtaining access to funding. Amoako (2013: 73) suggests that for funders to make informed economic decisions on extending credit, it is essential that SMEs provide "reliable financial information which has to be generated through an adequate accounting system".

The value associated with the adoption of MAPs has been clearly indicated in large organisations, but only minimally in the SME sphere, where their use is known to be limited, causing a negative impact on their business performance and sustainable growth (Nandan 2010: 64; Ahmad 2014: 237; Lavia-Lopez and Hiebl 2015: 81). Both international and local studies have identified a low adoption rate of MAPs amongst SMEs in contrast to large organisations (Armitage, Webb and Glynn 2016: 59; Otley 2016: 46; Azudin and Mansor 2017: 3). The implementation of adequate accounting systems in general, and MAPs in particular, will not only improve access to funding for the SMEs, but it will also improve the economic life of these entities (Amoako 2013: 73).

Manufacturing SMEs in particular need to adopt MAPs in their business processes so that they can be able to transform and sustain their business life cycle.

1.4 AIMS AND OBJECTIVES

The aim of this study is to explore factors influencing the adoption of MAPs by SMEs in the manufacturing sector in Durban; and to suggest guidelines that will facilitate the adoption of MAPs by SMEs in this sector.

1.4.1 Primary Objectives

This study attempts to find answers and provide solutions through the specific objectives listed below:

- To determine the current practices used by SMEs in the manufacturing sector in Durban.
- To examine internal and external factors affecting the adoption of MAPs by SMEs in the manufacturing sector in Durban.
- To suggest guidelines for the adoption of MAPs by SMEs in the manufacturing sector in Durban.

1.4.2 Critical Research Questions

- What type of MAPs are used by SMEs in the manufacturing sector in Durban?
- What are the internal and external factors affecting the adoption of MAPs by SMEs in the manufacturing sector in Durban?
- What guidelines can be suggested to facilitate the adoption of MAPs by SMEs in the manufacturing sector?

1.5 SIGNIFICANCE OF THE STUDY

SMEs in the manufacturing sector are in fact a significant economic sector, contributing over 13 percent towards South Africa's GDP (SEDA 2019: 7). The downward economic performance faced by South Africa, involving slow economic growth and limited transformation, has negatively affected the progress of these enterprises (Statistics South Africa 2018).

International studies have expressed concern with regards to the survival of SMEs during an economic downturn, indicating also that there is a lack of MAP adoption by such enterprises and yet there are minimal studies conducted in the South African context, signifying that there is a gap that needs to be addressed through conducting research into this situation (Yeboah 2015: 15; Otley 2016: 48; Shahzadi, Khan, Toor and Haq 2018: 213). The existence and preservation of these enterprises is significant not only for the economy but also for poverty reduction, and this can be addressed in part by incorporating MAPs for business development, growth and sustainability. Therefore, it was seen as important that the study should investigate the factors influencing the adoption of MAPs by this sector. The intention of the study was to gain a better understanding of the factors influencing the adoption of MAPs, while also contributing to the body of knowledge in management accounting research. This knowledge will also benefit other stakeholders who wish to promote entrepreneurship, enhance business performance and sustainability of manufacturing SMEs as well as other forms of enterprises.

1.6 RESEARCH DESIGN

The research follows acknowledged guidelines and procedures. Saunders, Lewis, Thornhill, Booij and Verckens (2011: 22) and Leedy and Ormrod (2014: 96) explain that a research design provides the researcher with overall guidelines and plans as to how to conduct the study. The research design includes the following elements: the research approach, the population, the sampling method, data collection instruments and data analysis procedures.

The researcher collected data from manufacturing SME owners/managers and other decision making stakeholders, by issuing self-administered questionnaires. Welman, Kruger and Mitchell (2011: 88) explain that one way that a researcher can solve the research questions is by applying a quantitative research method that will enable him/her to test and measure the factors relevant to the study.

In this study, a quantitative research approach was applied to establish the factors influencing the adoption of MAPs amongst a sample of manufacturing SMEs with the aim of generalising the findings to the wider population.

1.7 POPULATION

The study's population consisted of manufacturing SMEs located in the Durban area. Only manufacturing enterprises with more than 50 full time employees, but not exceeding 250, were targeted for this study. According to Gog (2015: 37) a research population is the group from which the sampling components are drawn and to which we want to generalise the findings. The population is made up of all the elements that make up our component of analysis.

The Small Enterprise Development Agency (SEDA) Report (2016) showed that there were 74,976 registered manufacturing SMEs located in KwaZulu-Natal. Statistics also show that there are more than 1 050 registered and operating manufacturing SMEs in Durban (Department of Trade and Industry 2016/17). The total population in this study is therefore made up of 1 050 manufacturing SMEs which are registered with the Durban Chamber of Commerce. A population size consisting of more than 1050 should have an estimated sample size of 202 (Sekaran and Bougie 2010: 295). The reason for targeting the owners/managers of these SMEs in the manufacturing sector was to get their perceptions and understandings on the factors that influenced them in adopting (or not adopting) certain management practises to their enterprises.

1.8 SAMPLING METHOD AND SIZE

The study focused on formally registered manufacturing SMEs which are under the control of the EThekwini Municipality region around the Durban area. For this study, a purposive sampling technique was applied to accommodate the collection of data from the estimated sample size of 202 manufacturing SMEs (Sekaran and Bougie 2016: 264). Non-probability purposive sampling was identified as the appropriate sampling technique due to its characteristics, particularly in selection of subjects that have the necessary capabilities and information to help support the answering of the research questions (Sekaran 2016: 269). This means the subjects were carefully selected by the researcher due to their special knowledge regarding the issue under investigation. In this study, candidates who possessed the necessary skills, knowledge and experience in adopting MAPs played a key role in providing the knowledge that assisted in achieving the objectives of the study. This method was chosen because of its convenience, low cost and speed in data collection (Sekaran and Bougie 2010: 272).

1.9 DATA COLLECTION INSTRUMENT

According to Patten (2017: 13) a questionnaire is a research instrument that is used to collect data by issuing statistical or survey questions with the goal of analysing the findings. These questions are pre-defined to meet the aim and objectives of the study.

The participants of the study were given a questionnaire and asked to express their views. The questionnaire addressed the problem through providing a list of questions specifically designed to address the topic (Fox and Bayat 2007: 88). Since the study focused on a large sample size of 202, it was appropriate that the researcher deployed a questionnaire to measure the factors in the study. The instrument, containing closed ended questions, ranked in a Likert scale, was administered manually to all the participants chosen for the study.

1.10 DATA ANALYSIS

According to Crossman (2014) data analysis is a process that involves converting raw data into meaningful information by means of statistical representations. These statistical representations may yield various data output sets such as graphs, charts, regression analysis, or frequencies. These analyses have an influence on the conclusions derived by the researcher. The Statistical Package Social Sciences (SPSS) version 26.0 was used to analyse the collected data from the participants of the study. SPSS has a variety of computer programmes that allow multiple evaluations and interpretations of the research instrument applied to the study (Hall 2013). It was used for descriptive analysis where cross tabulation, figures, tables and graphs were generated and used to present the findings of the study.

1.11 PILOT TESTING

A pilot study is important and is administered prior to the actual research taking place, so that the researcher can test the chosen instruments for validity (Blair, Crago, Hedman, Treguer, Magruder, Royer and Klaper 2013: 517). Pretesting assists the researcher to identify whether the study is feasible (Doody and Doody 2015: 1074). It is important as it enables the researcher to identify whether the research instrument has been constructed adequately, is free from errors, is easily readable and is not ambiguous. A pilot study of twenty randomly selected participants was conducted to test for validity, adequacy and reliability of the questionnaire. The respondents who took part in the pilot were briefed about the topic's aims and objectives, as well as the significance of their responses being honest. They were given enough time to ask any questions relating to the questions and statements on the questionnaire. They also had to specify whether they found the questions readable, understandable and easy to follow. The point of undertaking the pilot study was to improve the instrument by identifying whether there were any shortcomings or ambiguities in the questions, and also to identify whether there were formatting issues or errors.

This enabled the researcher to ensure that the final draft of the questionnaire was error-free, as modifications could be done prior to the main study.

1.12 VALIDITY

According to Cooper and Schindler (2008: 289) and Wood and Ross-Kerr (2011: 198) validity measures the degree to which a questionnaire measures what it is intended to measure. To ensure validity of the data collection instrument, content validity was carried out, where the researcher requested recognised experts in the field to give their opinions as to the validity of the tool. Validity was also ensured by piloting the questionnaire to the target population, as explained above. Both checks ensured that the researcher evaluated the suitability of the research method and its correctness, prior to undertaking the main study, thereby improving the questionnaire's validity (Nawi 2015: 91).

1.13 RELIABILITY

Reliability measures the consistency of the chosen research instrument that is to be applied in a study. This means that it tests whether the instrument will derive the same outcome even though it is distributed over a different time frame (Leedy and Ormrod, 2010; Gerrish and Lathlean 2015: 415). In this study, Cronbach coefficient alpha was applied to test the reliability of the study and this guided the researcher in identifying the consistency of the instrument chosen for the study.

1.14 ANONYMITY AND CONFIDENTIALITY

In research, anonymity refers to the researcher ensuring that the readers of the research are not able to identify the individual respondents' responses (Babbie 2017).

All participants remained anonymous, hence no confidential information was disclosed to the public via the research. The researcher pledged to ensure anonymity of the responses in a covering letter and in the letter of information provided to all the respondents.

1.15 ETHICAL CONSIDERATIONS

Ethical considerations involve the moral codes and authenticity applied during the study (Miller, Birch, Mauthner and Jessop 2012: 14). Ethical approval was obtained from the Faculty Research Ethics Committee at the Durban University of Technology. Participants were provided with all necessary information informing them about study. Consent was required from the participants indicating that they understood and volunteered freely to participate in the study (Klenke 2016: 148). A letter of information covered the following aspects pertaining to the study:

- The purpose of the study;
- An outline of the procedures;
- Any risks or discomforts to the participants;
- Benefits;
- Remuneration;
- Costs of the study; and
- Confidentiality of the participants.

1.16 STUDY LIMITATIONS

The study only focused on manufacturing SMEs located within the perimeters of the Durban area. The study specifically focused on medium sized enterprises that had over 50 but not more than 250 full time employees, meaning that micro businesses did not form part the study's targeted population. Therefore, the results obtained in this study are limited to the views expressed by those individuals who participated and may only be generalised with caution.

1.17 OVERVIEW OF CHAPTERS

This research study consists of five chapters.

1.17.1 Chapter One: Introduction and Overview of the Study

An introduction as well as the background justifying the need for the study is reflected in this chapter. A discussion of the aim that was formulated, the objectives of the study and the research questions are delineated.

1.17.2 Chapter Two: Literature Review

An intensive discussion of the literature concerning the adoption of MAPs by manufacturing SMEs is outlined. The chapter further identifies and discusses the theories which underpin the study. An exploration of environmental factors influencing the adoption of MAPs is also discussed extensively.

1.17.3 Chapter Three: Research methodology

A detailed discussion of the research design and methodology followed in the study is identified. The chapter clearly explains and outlines the methods applied. Thus the research approach, population, sampling, and data collection instruments are explained in conjunction with the aims and objectives of the study. Most importantly the participants' anonymity and other ethical considerations are outlined.

1.17.4 Chapter Four: Data Analysis and Discussion

A detailed discussion reflecting the findings is aligned to the aim and objectives of the study. This chapter further identifies and discusses correlations amongst study variables. The descriptive findings are presented in figures, charts and tables.

1.17.5 Chapter Five: Conclusions and Recommendations

Conclusions and recommendations derived from the findings of the research are discussed, and practices that could assist manufacturing SMEs to adopt relevant MAPs are formulated in order to enhance the adoption rate of MAPs by these enterprises.

1.18 SUMMARY

The introductory chapter provided the background of the study, problem statement, formulated aims and objectives of the study. Furthermore, the significance of the study as well as the methodology were outlined. Lastly, the overview of chapters reflects the research path that will guide this research.

The next chapter will discuss the literature review and theoretical framework underpinning this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The previous chapter provided a background to the study, gave the problem statement, and also noted the limitations of the study. The aim and objectives were explained and the research approach and methodology were reflected.

This chapter discusses the literature relevant to the study, and provides a theoretical framework for the research, focussing especially on critical factors influencing the adoption of MAPs by manufacturing SMEs. These factors are considered in depth.

2.2 DEFINITION OF TERMS USED IN THIS STUDY

Definitions of the terms used in this study are given in this section.

2.2.1 Small and Medium Enterprises (SMEs)

The World Bank Group (2015: 8) and van Scheers (2018: 163) are in agreement that there is no single, or common, standard that can be used to define what constitutes an enterprise as an SME. This is specific to each country. However, there are certain characteristics used to measure the extent to which SMEs may be so classified, which involve the number of full time employees and/or annual revenue or turnover. The SME definition is therefore distinct and based on the characteristics stipulated by each individual country (SEDA 2014). Scholars such as Maduku, Mpinganjira and Duh (2016: 712) and Gbandi and Amissah (2014: 329) as cited by Donner and Escobari (2010: 648), confirm that there is no universal definition of SMEs since different nations have their own specifications. However, Table 2.1 below reflects accepted criteria according to the World Bank Group 2015.

Table 2.1: Definition of SMEs using two categories

Country	Number of Employees	Annual Sales Turnover
India	—	—
South Africa	<200	<$6.2 million
Taiwan	<200	<$3.3 million
Brazil Industrial sector Service sector	<500 <100	— —
Poland	<250	<$68 million
Turkey	<250	<$12 million

Source: World Bank Group: Compilation of exchange information (2015)

The World Bank Group (2015: 9) states that European Union (EU) SMEs are demarcated as enterprises employing less than 250 employees with sales of less than €50 million ($68 million) or which have an annual balance sheet that is more than €43 million ($58 million).

In the United State of America (USA), the definition of SMEs ranges from a firm's style of management, to access to finance, to number of employees (El Kalak and Hudson 2016: 136) and these enterprises are further defined as being micro, small or medium (SMMEs) (El Kalak and Hudson 2016: 136). However, the most common criterion used to define SMEs in the USA and Canada is any company employing less than 500 people (Muriithi 2017: 37).

In Brazil the number of full time employees is applied when defining these enterprises although this differs from the business sector's definition (Eniola and Entebang 2015: 335). According to the business sector, SMEs are broken down according to their nature or trades. In the industrial sector, the enterprise should have less than 500 full time employees in order to be classified as a SME. However, when dealing with the commercial and service sector, less than 100 full time employees defines this type of enterprise.

Radulovich, Javalgi and Scherer (2018: 115) state that in India for a SME to be approved for trade, it must meet the definition criteria stipulated by the 2006 Micro, Small and Medium Enterprises Development Act. This states that enterprises engaged in the manufacture, production, processing, or preservation of goods will have an investment in plant and machinery of less than R100 million ($1.6 million) to be deemed an SME.

In South Africa the guidelines for classifying SMEs were formulated by the National Small Business Amendment Act (NSBAA) in 2003. This Act defines this spectrum of enterprises according to their various sectors, and further classifies their operations according to the number of full-time employees (less than 200), annual revenues, and total gross asset value (Maduku *et al.* 2016: 712). SEDA (2019) also states that SMEs can be classified as entities having less than 250 full-time employees. The Act also demarcates SMEs as a separate and distinct entity, including co-operative enterprises and non-governmental enterprises. These can be organisations controlled by one person or more, including controlling divisions or subsidiaries (Khoza, Groenewald and Schachtebeck 2018: 101). The International Leadership Development Programme (ILDP) adds to the Act in indicating that small businesses have a significant impact on the economy regardless of whether they are micro, very small, small or medium in size (ILDP 2014: 9). It also explains the divisions using the equivalent of paid employees, turnover and asset value – excluding fixed property (ILDP 2014: 9).

Masocha and Fatoki (2018: 2) therefore concludes that, as there are no conclusive definitions for classifying these enterprises, South Africa and other countries adopt the number of full time employees and revenue as their general yard-stick for identifying SMEs. These measures were therefore also adopted in this study for identifying those manufacturing enterprises to be included within the targeted population. The appropriateness of this criterion is confirmed by Quartey, Turkson, Abor and Iddrisu (2017: 21) who show that the majority of the South African SMEs elect to use this criteria, as does the Reserve Bank (South African Reserve Bank

2015). Other studies conducted by Abor and Quartey (2010: 217) and by Ahmad (2014: 236) also used the number of employees to define which companies could be considered as SMEs in their research.

2.3 MANAGEMENT ACCOUNTING PRACTICES (MAPs)

According to Ittner and Larcker (2002: 788) MAPs can be defined as various tools that support managers in dealing with the costing, budgeting, pricing, decision support and reporting functions of the organisation. CIMA (2015: 26) concurs with this definition and explains that these tools assist management in reaching solid decisions over the deployment of business resources. These techniques have been fairly widely adopted amongst large firms and their use can greatly assist SMEs in reaching their full business potential.

Messner (2016: 103) further defines management accounting as the accounting that helps managers facilitate informed decision making in their organisations. Weygandt, Kimmel and Kieso (2010: 4) explain that MA comprises both financial and non-financial information that assists the decision makers of an organisation to run their operations sustainably, efficiently and effectively. Moreover, the adoption of MA can be implemented by all types of businesses to ensure that proper internal planning and control measures are exercised. Drury (2008: 19) and Drury (2015: 5) emphasise that business performance is heavily influenced by the decisions taken by management and this generally requires them to adopt the most appropriate management accounting practices (MAPs). For a sound decision to be taken, consultation of relevant MAPs should be exercised in analysing both financial and non-financial information which then enables managers to have more control over the resources of the business (Azudin and Mansor 2018: 223). The application of these MAPs in organisations may make the difference between success or failure, depending upon how effectively the techniques are employed (CIMA 2015).

2.4 SIGNIFICANCE OF SMALL AND MEDIUM ENTERPRISES (SMEs)

According to Awiagah, Kang and Lim (2016: 817) and Ayandibu and Houghton (2017: 134) SMEs make up the majority of businesses in both the developed and developing countries, amounting to 90 percent of all businesses worldwide. Abdin (2017: 2) supports Mitchell, Gavin and Julia (1998: 32) in finding that SMEs are the leading economic facilitators globally. These enterprises can therefore be recognised as the backbone of global economic development, reducing poverty and increasing employment (Piperopoulos 2016: 96). Apart from being a catalyst for job creation and social progress, they stimulate fiscal growth and stability (Dahnil, Marzuki, Langgat and Fabeil 2014: 120). Literature has substantiated the value added by SMEs regardless of the country's position in per capita income (Aysan, Disli and Ozturk 2016: 187; Ahmad 2014: 236; Amoako 2013: 73). Statistics South Africa (2018) indicated that currently SMEs contribute between 70% and 95% to the South African Gross Domestic Product (GDP). It is therefore clear that these enterprises must be nourished and maintained in order to bring equilibrium and sustainability to each economy (Valaei, Rezaei and Ismail 2017: 225).

In the first half of 2018 the South African GDP declined from 1.5 to 0.7 percent as a result of the recession experienced at that time (Statistics South Africa 2018). Similarly, other small and medium sized developing countries are defenceless against trade interference and financial instability (National Treasury 2018: 9). In South Africa, the significance of SMEs was discussed in the medium-term budget policy speech which was delivered by Finance Minister Tito Mboweni on the 24 October 2018, in which he stated that R1.4 billion had been raised to date to ensure that the small business and innovation fund is available to empower the SME life cycle. There remains however much concern as to the survival of many SMEs since the majority have problems in raising start-up funds, as well as in maintaining or sustaining their businesses (Mboweni 2018: 23).

According to the National Treasury report (2018: 24), the Financial Sector Transformation Council (FSTC) along with the Department of Trade and Industry (DTI) were appointed to allocate funding to the sum of over R100 billion over a five-year term, to black industrial enterprises and firms. This indicates awareness and preparedness to invest in these enterprises by the SA authorities'. This also signals that these enterprises are highly valued and understood as an engine of economic transformation and advance.

Manufacturing SMEs are understood to be the major contributor to global trade and thus to any nation's GDP (Hilmola, Lorentz, Hilletofth and Malmsten 2015: 1005). Aziz and Samad (2016: 257) also confirm that manufacturing SMEs are the key drivers within Malaysian economy, contributing MYR16, 729 million which is equivalent to a contribution of $ 3,997 million towards the country's GDP. Shokri, Waring and Nabhani (2016: 852) confirm that the same applies in Germany where manufacturing enterprises provide the largest contribution from SMEs. Again, in Africa, manufacturing SMEs provide infrastructural developments that are of more monetary value than the service-based economy (Oguntoye and Evans 2017: 76).

In South Africa, manufacturing SMEs also add great value to the GDP. In recent years, they are also known to have improved their pro-environmental behaviour, thus helping to solve global warming and address other climate challenges (Hamann, Smith, Tashman and Marshall, 2017: 26). Again, Business Report (2019) shows that manufacturing SMEs in South Africa are recognised by the government as the major driver of growth, having increased by 7.5 percent from the 2018 financial year. However, in the same period the SEDA report (2018) also reflected that there was a decline in the manufacturing industry from 37 index point to 27 index points in the semi-annual report, despite the report identifying opportunities for manufacturing SMEs to attain contracts and outsourcing deals linked with large companies.

Aboelmaged (2018: 211) indicated that manufacturing SMEs are also major promoters of environmental sustainability in Egypt, where they are promoting renewable energy, waste management, energy efficiency, water saving and sustainable innovation which are all significant for attaining a sustainable economy. Higgs and Hill (2019: 29) echo the significance of manufacturing SMEs and emphasise their contribution towards sustainable development and developing a green economy. However, Masocha and Fatoki (2018: 2) argue that the sustainability of SMEs themselves has to be supported more rigorously by government as the failure rate of these enterprises, after their start-up phase, is high.

2.5 CHALLENGES FACING SMEs WITHIN THE SOUTH AFRICAN CONTEXT

According to Thusi and Zondo (2016: 211), the greatest challenge faced by South African SMEs is a lack of access to the finance needed to establish and maintain their business operations. Kwaning, Nyantakyi and Kyereh (2015: 28) concur and find that developing countries such as South Africa and Ghana lack adequate financial resources, putting substantial constraints on their SME development.

Algerian SMEs are also known to have to tackle many constraints, including legitimising their registration, gaining access to capital, having adequate staff training and ICT knowledge, as well as the necessary infrastructure, which restricts their ability to grow and become sustainable (Bouazza, Ardjouman and Abada 2015: 102). Nigerian SMEs face similar problems. A Nigerian study categorised their challenges as including: an unconducive environment, lack of funding, lack of managerial skills and lack of access to modern technology (Gbandi and Amissah 2014: 328). Kabanda, Tanner and Kent (2018: 269) therefore agree that South African SMEs face challenges similar to other developing countries.

With much debate around the subject of sustaining SMEs, or of SME survival, scholars have looked at the factors that hinder growth and at the challenges they face (Lose and Tengeh 2015: 14345). These scholars have argued that the greatest challenge faced by any SME, including those in the manufacturing sector, is the ability to gain start-up capital and this is due in part to inadequate accounting skills (Bouazza *et al.* 2015: 103; Balios, Daskalakis, Eriotis and Vasiliou 2016: 2). Rahman, Yaacob and Radzi (2016: 124) found that the majority of the SMEs fail due to a lack of awareness of business incubators which were initially developed to support businesses in gaining, as well as maintaining, networks, in order to introduce them to, or to enhance, their managerial and marketing skills.

According to Kusi, Opata and Narh (2015: 707), many manufacturing SMEs fail due to lack of capital resources, and to mismanagement of funds on account of the owner of the enterprise having inadequate experience. Oyelana and Smith (2015: 180) found the mismanagement of funds and inadequate experience to be the principal causes of South African SME failure. The Department of Trade and Industry has however formulated strategies designed to curb this high failure rate by introducing business incubators (Tustin 2015: 86).

Likewise, the Global Entrepreneurship Monitor Report (2017: 37) indicates that manufacturing SMEs are faced with a growing challenge of early failure. This has escalated due to inefficiency, and a lack of innovation impacting severely on SMEs' profitability. In this report, it was found that 38.7% of SMEs lack profitability and this was the major reason for SMEs' discontinuance. Lekhanya (2015: 221) also found that the majority of SMEs are faced with a range of critical factors, including a lack of strong leadership amongst the owners or managers, and limited corporate governance skills. This is supported by Dlamini (2017: 3) who also found that SMEs in SA are faced with a challenge of limited managerial capabilities and a lack of staff training.

Most of the challenges that were discovered as facing South African SMEs are similarly faced by their Malaysian counterparts where poor planning, a lack of marketing knowledge, and the absence of managerial skills and competencies were noted (Lose and Tengeh 2015: 14346; Husin and Ibrahim 2014: 55). Most SMEs cannot afford the fees charged by consultants and external management accountants or accounting practitioners (Carey 2015: 169). The function of preparing the financial statements of the enterprise then falls on the owner, who has to understand the data available and to prepare financial statements often with limited accounting knowledge (Vanauken, Ascigil and Carraher 2016: 7). According to Univ (2014) SA's manufacturing SMEs are faced with similar issues including insufficient owner competence, a lack of capital management by the enterprise, deficient knowledge of pricing methods, a lack of planning and budgeting, limited or no understanding of finance and no experience in record keeping. Akanbi (2018: 23) confirms the same issues as confronting the business environment of manufacturing SMEs, as do Fatoki and Odeyemi (2010: 131); Olawale and Garwe (2010: 730); Rambe and Makhalemele (2015: 678) and Msomi *et al.* (2019: 5). It is therefore a concern in all countries that these issues be addressed if the future of manufacturing SMEs beyond the start-up phase is to be assured.

With this overview of challenges affecting SMEs in general, it is clear that common issues confront these businesses not only in South Africa, but globally. In summary, these challenges include lack financial capital, lack of access to government grants, and low education or financial knowledge which inhibits the implementation of MAPs (Akinboade 2015: 187). Moreover, Fanta (2016: 312) states that most manufacturing SMEs have infrastructural issues that are regarded as important for the successful application of MAPs. Chinomona and Maziriri (2015: 840) state that the type of management, as well as the staff employed by SMEs in the manufacturing sector, have an influence on their performance in the market and this may affect the likelihood of their being able to implement MAPs successfully.

2.6 DEVELOPMENT OF MAPs

The evolution of Managerial Accounting (MA) started first as cost accounting and was introduced as early as 1925 (Kaplan and Johnson 1987). These authors explain that the industrial revolution took place even earlier, about 190 years ago, when the first management accounting developed in the United State of America and other countries. Fleischman and Parker (1991: 362) record that an early form of cost accounting was introduced at a time when the production of products such as textiles was rapidly increasing, giving rise to the need for some costing, controlling and planning related information.

The birth of management accounting is attributed to a company which manufactured railway tracks, in order to determine the expected costs and to do the necessary planning (Loft 1986: 139). According to Chenhall and Langfield-Smith (1998: 3), Andrew Carnegie, the philanthropist associated with the American steel industry also used a costing sheet at the end of the nineteenth century to determine the costing of his steel products. In this way, management accounting began to be used by various organisations. At the beginning of the twentieth century, there was a significant advance in management accounting when Du Pont's return on investment management accounting model was introduced in order to assess the strengths as well as the weaknesses of the financial performance of organisations (Swieringa and Weick 1983: 307). In this way, management accounting became a well-established and mature business discipline (Chandler 1977; Kaplan and Johnson 1987). The development of cost accounting and management accounting from the mid-twentieth century is summarised in Table 2.2 below:

Table 2.2: Evolution of Management Accounting in different years

Year	Evolution
1950	Focus on the valuation of cost and its determinants along with some budgeting techniques and technology.
1965	The concept of responsibility accounting and information for management, and control by using different sort of technologies were considered.
1985	Focus on the reduction of the wastage of resources by using different cost and management accounting techniques.
1995	A major change occurred during this period in which the following concepts were put into practice: value creation, effective use of resources, determining the drivers of value, shareholders value, and information technology.
2000	The concept of supply chain management with the reduction of distribution cost and controlling inventories were famously introduced (Mohammad Talha, 2010).

Source: Ashfaq, Younas, Usman and Hanif (2014)

Various MAPs had therefore been created over the period of the formation and growth of management accounting and, more precisely, MAPs in the manufacturing sector have been an important topic in the literature of management accounting. Major debates have emerged regarding the relevance of MAPs and the effects of what is learned through the theory of management accounting, compared to what is done or practiced in industry (Ax and Greve 2017: 60; Messner 2016: 103). Since the success or failure of an organisation can depend on the MAPs facilitated internally in the organisation, it is crucial to understand the different types of MAPs that can be applied by managers to make informed decisions on a daily basis (Drury, 2012: 5).

MAPs provide organisations with the necessary survival skills that assist them in a competitive environment, both locally and within the global environment according to Gichaaga (2014: 2).

This author explains that this is achieved by providing a guide to managerial action, informed behaviour, support systems and to creating the cultural values necessary to achieve an organisation's strategic objectives. MAPs include two categories – traditional and contemporary (Leite, Fernandes and Leite 2016: 60). These MAPs can include, but are not limited to, the following: costing accounting systems, budgeting systems, performance measurement tools (PMTs), decision support systems and strategic management accounting (SAM) (Otley 2016: 46). Each category of MAPs will be discussed individually below.

Sunarni (2015: 381) states that traditional MAPs are techniques or accounting systems that deal with regulating, modifying and planning the costs associated with the manufacturing process or service rendered. However, due to rapid changes and newer advances in the global environment these techniques are now regarded as inadequate to meet contemporary business needs (Pavlatos and Kostakis 2015: 152). The various types of MAPs are discussed below.

2.6.1 Cost Accounting Systems (CAS)

Cost accounting is a framework used by organisations to evaluate the cost of their products for profitability analysis, inventory valuation and cost controls (Armitage *et al.* 2016: 36). The different types of CAS may include standard costing, marginal costing, absorption costing, target costing and activity-based costing (Drury 2016). According to Harris and Durden (2012), there are two main types of CAS, one being activity-based costing (ABC) and the other being inter-organisational cost management (IOCM). However, due to the rapid changes in the business environment regarding the use of ABC, 'just-in-time' and 'total quality management' tools have emerged. Studies conducted by Maskell, Baggaley and Grasso (2016: 22) and by Parker and Fleischman (2017:15) argue that these costing techniques are still relevant and remain influential for decision making in the business world, even though the business environment is constantly changing.

Moreover, studies by Plank (2018: 4) and D'Onza and Greco and Allegrini (2016: 60) both find that SMEs often do not harmonise their adoption of cost accounting systems due to a lack of knowledge on the part of their managers concerning MAPs. The way in which managers control an organisation's costs is critical, as this influences the organisations' performance (Modell 2014: 84; Lavia-López and Hiebl 2014: 114; Fullerton, Kennedy and Widener 2014: 414-416).

This shows that there is a gap between what is learned through MAP theory and what is being applied by organisations in practice in industry. Laitinen (2014: 230) found that in developed countries such as the United States and China, CAS was relevant to both large and small businesses. Jänkälä and Silvola (2012: 499) also found that CAS aids management in making operational improvements and that it can directly influence strategic decision making.

Lavia-López and Hiebl (2014: 113) concur that the application of CAS improves organisations' profitability and enhances sales growth, and that this is associated with enhancing the overall financial performance of an organisation through cost reduction. It therefore enables organisations to manage their limited resources and to be able to cut down on unnecessary costs (Langfield-Smith, Smith, Andon, Hilton and Thorne 2017: 35). According to Johnson and Schaltegger (2016: 489) the relevance of CAS in developed countries such as China and Japan has been debated. These countries have a high adoption rate of cost accounting systems. Dale and Plunkett (2017: 89) found, however, that manufacturing SMEs are less likely to adopt CAS than are the larger firms.

2.6.1.1 Standard Costing (SC)

According to Langfield-Smith *et al.* (2017) standard costing is recognised as a technique that is used to pre-work the cost to make a unit of a product that serves as a point in computing deviations from the norm.

Furthermore, these norms are predetermined standards that are used for the purposes of planning, setting targets and benchmarking actual costs, as well as revenues, against the unit cost of a product. Posteucă, Ahuja, Khamba, Bodek, Budugan, Georgescu, Burnham, Burrows, Chenhall and Carlson (2018: 709) argue that there is a low adoption of SC by the construction industry, while large manufacturing organisations significantly utilise SC for the benefits of planning a unit cost, controlling operations and determining budgets, as well as benchmarking against actual performance. However, scholars have raised concerns regarding the relevance of standard costing in the modern manufacturing environment due to just-in-time (JIT), automated manufacturing technology and total quality management (TQM) techniques which are empowered with multi-skilled teams controlling the operation of an organisation autonomously (Sinclair, du Toit, Steyn, Fouche and Cloete 2017: 341). Besides the concern raised regarding the expensive implementation of standard costing, most scholars agree that SC causes time constraints on labour when it is implemented, as more labour is required which leads to further, frequently exhaustive, costs being involved in this process (Klychova, Safiullin and Zakirova 2014: 195; Abdullahj, Oni, Ahmed and Shakur 2015: 5). Lebedev (2018: 1202) states that the adoption of this type of MAP in Russian medium-sized enterprises is relatively slow and should be developed further before a judgement on its efficiency can be made. Armitage *et al.* (2016: 48) find that in Canada and Australia, SMEs seldom implement SC due to a lack of resources within these organisations.

Not much research has been carried out in the South African context regarding the adoption of SC alone, but the findings gathered from this research should be able to contribute towards that body of knowledge.

2.6.1.2 Marginal Costing (MC)

According to Cuzdriorean (2017: 295), marginal costing is a technique that is also referred to as a 'variable costing' technique which assists managers in charging the variable cost to a product while the fixed costs are expensed against the contribution for the period in which they have been incurred. Marginal costing is used to emphasise the element of management decision making and it indicates to managers whether their decisions are favourable as they should indicate a positive contribution (Boyce, Evangelou, Govender, Koortzen, Shaku and Zeimerink 2017: 342). Applying a marginal costing technique takes both financial and non-financial information into consideration in decision making (Cloete and Marimuthu 2018: 274).

According to Brandt, Van Biesebroeck, Wang and Zhang (2017: 8) marginal costing is frequently adopted by large Chinese manufacturers. Brandt *et al.* (2017: 8) and Tabitha and Oluyinka (2016: 49) found that the application of marginal costing in the manufacturing industry enabled managers to take appropriate decisions on their day to day operations effectively. This is supported by Hsieh and Olken (2014: 91) who found that there is a significant application of marginal costing by both small and large enterprises in the process of decision making. However, they had concerns with regards to medium enterprises as they appeared to be missing from those enterprises applying marginal costing (Hsieh and Olken 2014: 91).

In contrast, countries such as India, Indonesia and Mexico have been identified as low adopters of costing systems as these systems are regarded by managers in those countries as being low income generators (Hsieh and Olken 2014: 91). Also marginal financing capital difficulties make it harder for the growth and progression of these enterprises, starting off as small firms, then evolving into medium firms and eventually into large firms, according to Aghion, Cai, Dewatripont, Harrison and Legros (2015: 23-24). On the other hand, they find that, with the effective use of marginal costing systems, a manufacturing firm can increase its productivity and growth while maintaining a competitive edge (Aghion *et al.* 2015: 27).

2.6.1.3 Absorption Costing (AC)

Novák and Popesko (2014: 92) explain that absorption costing is a management accounting technique used to cost a product with the inclusion of total cost, which includes both direct and indirect costs associated with manufacturing a product. AC is applicable for comparing relevant costs when it comes to decision making in management accounting, and it is fully applied in the preparation of financial statements in financial accounting (Abdelrahman, Abdullah and Abas 2017: 269). Absorption costing is used for strategic purposes in assuring that the business's goal of obtaining profits is attained with limited resources (Abdelrahman *et al*. 2017: 269). According to Fisher and Krumwiede (2015:14) AC does not always attain accuracy when determining a product cost, which can cause misleading assessment of profits due to fixed costs being included in the cost of a product. De Melo, Leone and José (2015:83) found that many SMEs in Brazil who adopt absorption costing have owners who are unclear as to the difference between direct and indirect costs, as well as how these costs should be treated in the costing process. But, when correctly applied, absorption costing is ideal for the comparison of profits and also aids organisations in taking the correct decisions by determining the relevant contributions of costs (Shah, Naghi, Ganji and Hasan 2016: 363).

2.6.1.4 Target Costing (TC)

According to Behncke, Maisenbacher and Maurer (2014: 781) target costing (TC) is a tool used by management to regulate the product's life-cycle costs, which need to be adequate to develop specified functionality and quality, while ensuring desired profit margins. Amir, Auzair and Amiruddin (2016: 89) and Ojua (2016: 2) found that if TC is used appropriately it may be beneficial for gaining a competitive edge for SMEs, and that it is effective for organising an enterprise's strategic goals. Further to this, TC plays a significant role in controlling business expenditure and impacts on the growth of an enterprise (Amir *et al.* 2016: 86). Its primary focus is to ascertain market price through the deduction and enforcement of allowable costs within development (Amir *et al.* 2016: 89).

In most developing countries, TC is not implemented due to lack of knowledge and misunderstanding of the benefits associated with using such a technique (Azudin and Mansor 2018: 226). With the benefit of cost reduction, as most Japanese automobile companies attained a competitive edge in the market, it shifted the focus to a profit management tool (Baharudin and Jusoh, 2015: 526; Armitage *et al.,* 2016: 64). However, many studies have revealed that it is hard to implement TC outside Japan, since it was discovered there first.

2.6.1.5 Activity Based Costing (ABC)

Plank (2018:2) explains that activity-based costing (ABC) is a management tool that is specifically designed to identify and to assign cost drivers of indirect costs to their respective activities. Gylling, Heikkilä, Jussila and Saarinen (2015: 94) add that ABC replaced the traditional costing system as a more up-to-date technique. The traditional costing system was challenged when it was found to be providing inaccurate information when allocating overheads to products (Gyliing *et al.* 2015: 94). ABC can be adopted in any type of industry, but there is some concern when it comes to the adoption of ABC by manufacturing SMEs across different countries (He, Zhang, Xu and Bian 2015: 242).

In India, a study done by Dubey, Bag and Ali (2014: 40) showed evidence that SMEs are the major contributors to the economy but they do not have the resources to facilitate ABC in their enterprises. Few studies have provided substantial evidence of the adoption of ABC by South African manufacturing SMEs. This is a gap that this study endeavours to address.

2.6.2 Budgeting Systems (BS)

Cost control is essential for any type of business and can be defined as a practice used to identify and reduce business expenses, while generating bigger profits. However, according Armitage *et al.* (2016: 48) this can only start with a budgeting

process. Budgeting systems are tools that are used by managers to plan and control the utilisation of the organisation's scarce resources (Ngwenya and Pretorius 2012: 495). Moreover, this planning system is designed to allow management to acquire and maintain what was initially set out in the objectives of the organisation (Klychova, Faskhutdinova and Sadrieva 2014: 79). The actual results are compared with the budgeted expectations, and if the actual costs are higher than planned, management takes action (Drury 2014). Drury, Braund, Osbourne and Tayles (1993: 43), as revised by Drury (2016), say that budgeting control is a process of planning future business activities based on strategic goals.

In a study conducted by Uwonda and Okello (2015: 13), it was established that 20.33% of SMEs in Northern Uganda did not monitor their budgets due to the inadequate skills of the business owners. Fatoki (2014: 155) found that South African SMEs also have low budgeting knowledge, along with inadequate financial planning, analysis and control, book-keeping, understanding of funding sources, business terminology, finance and information skills, and also that they make limited use of technology. Risk-management is therefore difficult as the necessary financial literacy is lacking. But Vogl, Weiss and Helu (2016: 1) argue that manufacturing SMEs must plan in order for them to be sustainable and grow. Mazzarol (2014: 5) states that forecasting is a key component in attaining business profitability as well as sustainability and this is critical for SMEs.

Uwonda and Okello (2015: 3) agree that prior to any investment commitments, planning is essential at the initial phase of the business. As stated by Daunfeldt and Hartwig (2014: 101) a budgeting system is important for businesses as this provides guidance on the uncertain future, and the nature of the budgeting system chosen will have future implications for the organisation's performance and value. Small and medium manufacturing firms in developing countries have a low adoption rate for BS compared with large firms (Shields 2015: 126; Otley 2016: 46; Nazarova, Shtiller, Selezneva, Kohut and Seytkhamzina 2016: 3).

This is largely due to their limited resources, access to funding, low rate of networking and complexity of their enterprise structures (Shields 2015: 126; Otley 2016: 46; Nazarova *et al*. 2016: 3). There are several types of budgeting techniques namely: operational, flexible, capital, incremental and zero-based. Sandalgaard and Bukh (2014: 410) criticised the use of annual budgets in this day and age as they revealed that they can be replaced with adaptive MAPs such as rolling forecasting, non-financial performance measures, and relative performance evaluation. Budgeting systems include the following: operational, flexible, capital, incremental, zero-based, continuous and planned programming and budget approach. These are discussed below:

2.6.2.1 Operational Budget Systems (OBS)

According to Jamil, Mohamed, Muhammad and Ali (2015: 626) an Operational Budget System (OBS) is a tool used internally in the organisation and is specifically designed for short term purposes, outlining the expenditure and revenues required for a department or cost centre. The major objective for the business operation is to reach its goals through setting functional targets that are measures or yardsticks (Zhou 2016: 464). Zor, Lindern and Endenich (2019: 660) state that most manufacturing SMEs use OBS to plan and support the allocation of their resources. However, Uwonda and Okello (2015:13) challenge this as they found that most SMEs do *not* practice OBS due to the owners' inability to control and plan the enterprise's resources effectively, and this impacts on the survival of the enterprise. This is supported by Maduekwe and Kamala (2016: 190) who found that the low adoption of OBS is due to factors such as the lack of skills, knowledge and education of many SME owners, attributing the high SME failure rate in Uganda to these key influences. These differing literature findings suggest that there are contradictory research findings in the sphere of SMEs pertaining to OBS and further clarity should be sought through future research.

2.6.2.2 Flexible Budget Systems (FBS)

A flexible budget is a tool used by an organisation for performance evaluation against the organisation's activities or plans in order to ensure that the activities are controlled (Šatanová, Závadský, Sedliačiková, Potkány, Závadská and Holíková 2015: 1147). It is important that the managers use the information provided to address the variances that occur and take the necessary action. Mbawuni and Anertey (2014: 71) examined the effective use of flexible budgeting techniques in Ghanaian SMEs and found that this system assists managers in minimising their operational costs while implementing effective decision-making that adapts to global change. Rozlan and Hashim (2018: 3) showed that New Zealand's SMEs used FBS to ensure that the allocation of resources was appropriately used to allow these companies to adjust to the diversification in the market.

2.6.2.3 Capital Budgeting Systems (CBS)

Rossi (2014:341) explains the concept of a capital budgeting system (CBS) as an important tool that is used to assess the sustainability of an organisation's long term investment, or replacement of an asset, or purchase, or a new project or product line. Furthermore, CBS looks at the organisation's cash funding against the capital structure of the organisation. Further to this Gitman, Beaumont Smith, Hall, Makina, Malan, Marx, Mestry, Ngwenya and Strydon (2015: 388) explain that CBS is "a process of evaluating and selecting long term investments that are consistent with the business's goal of maximising the owners' wealth*".* There are various methods under CBS which an organisation can adopt, these methods include the following: Payback period (PP), Discounted Payback Period (DPP), Accounting Rate of Return (ARR), Profitability Index (PI), Internal Rate of Return (IRR) and Net Present Value (NPV).

PP is an investment indicator or evaluation technique that is used to measure the time taken to recover the initial investment assigned to a project (Karásek and Pavlica 2016: 121).

However, even though this technique is able to identify the time it will take for firms to regain their initial investment, not many SMEs are adopting it due to a lack of knowledge amongst the SME owners/managers (Falkner and Hiebl 2015: 136). In Korea, a study conducted with manufacturing SMEs revealed that there was a low adoption rate of PP (Suk Lee and Jeong 2016: 578). This is similar to the findings of a study conducted by Katabi and Dimoso (2016: 83) which indicated that the majority of South African manufacturing SMEs do not adopt PP as an investment evaluation technique.

DPP is a technique that is used to establish the time required for a project to break even, by taking into account the time value of money when forecasting for investment decisions (Abeelen, Harmsen and Worrell 2016: 162). DPP has been recognised as the dominant technique of CBS in the United Kingdom (Szűcsné-Markovics 2016: 351). However, no significant research has been done amongst South African manufacturing SMEs regarding this technique.

ARR on the other hand, is a tool that is used in CBS to analyse the feasibility of a project by using financial ratios, but these ratios exclude the time value of money (Ramírez and Romero, 2017: 778). ARR, also referred to as ‘return on investment’ (ROI), is known to be less reliable for investment appraisals (Tappura, Sievänen, Heikkilä, Jussila and Nenonen 2015: 155). ARR has been identified by scholars as a misleading investment indicator since the information provided by these ratios focuses on ratios instead of cash actually received or paid (Easton and Monahan 2016: 58).

Apart from ARR, PI is also used as a CBS tool that measures the acceptability of a project by analysing the relationship between the costs and benefits (Cuthbert and Magni 2016: 130). Not much research has been done on the adoption of PI by South African manufacturing SMEs.

As mentioned above, IRR is one of the tools used under CBS. It is a metric used to equate or break even the net present value using discounted cash flows of a project (Patrick and French 2016: 664). Patrick and French (2016: 665) found that IRR is a more popular tool adopted by manufacturing SMEs in practice, compared to NPV. NPV is the preferred theoretical technique when analysing the level of acceptance of a venture, as it factors in both discounted inflows against outflows over an estimated time frame (Fleten, Linnerud, Molnár and Nygaard 2016: 503).

However, de Andrés, de Fuente and San Martín (2015: 38) argue that all these techniques are directly affected by a firm's characteristics, which include size and management's level of education. Karadag (2015: 30) found that the adoption of CBS by SMEs is low in the manufacturing sector due to their complex nature, different demographics and the uncertain availability of resources. However, Chittenden and Derregia (2015: 226) point out that SMEs in the United States adopt the NPV technique which is regarded as less complicated and thus easier to adapt. It is also evident that capital intensive large firms use these techniques more than smaller firms. However, de Andrés, de Fuente and San Martín (2015: 38) concluded that a firms' future and success solely depends on the investment decisions taken today under uncertainty and risk. These authors also found that the majority of SMEs in Spain preferred using accounting profit criteria over any of the capital budgeting techniques, while Rossi (2016: 54) found that in Southern Italy a payback technique is frequently adopted.

Thus, overall, despite the wide adoption of CBS in developed countries, there is a low adoption rate for such techniques in developing countries which impacts on the survival and growth for these enterprises. Therefore, Samuelsson, Andersén, Ljungkvist and Jansson (2016: 696) emphasise the significance of long-term planning for manufacturing SMEs to enable them to implement sustainable strategies such as capital budgeting, which could ensure business survival and growth.

2.6.2.4 Incremental Budget Systems (IBS)

According to Ashfaq *et al.* (2014: 107-108) an incremental budget is similar to the original budget, except that it is derived by adding or increasing the percentage from the previous period's budgeted values. Ahmad (2017: 342) identified that there is a major gap in the literature regarding IBS employed by manufacturing SMEs, and this area needs to be addressed. However, this study looked at a cross comparison between large and small firms in Australia, where it was found that the majority of SMEs responded favourably to the adoption of IBS as they saw that this system is linked to three key objectives, these being: operational planning, performance evaluation and strategic formation. The rationale for having an IBS for the organisation is to be able to include inflation, as the initial planning of a business is not a guarantee of sustainability, and the importance of successional planning indicates that the business is a going concern (Kengatharan 2016: 16; Maduekwe and Kamala 2016: 190).

2.6.2.5 Zero-Based Budget Systems (ZBBS)

According to Réka, Ştefan and Daniel (2014: 576), a zero-based budget is a tool which is used by an organisation's management to project their expenses from scratch as they start a new period. No expenses are taken from the previous period as management still needs to justify and also evaluate the costs. This technique requires a lot of time and is not an easy task to carry out for larger firms (Armitage *et al.* 2016:36). Also, the majority of manufacturing SMEs in developed countries do not see the relevance of applying ZBBS since newer or modernised budgetary systems have emerged in the field of management accounting during the period of globalisation (Armitage *et al.* 2016: 36). Šiška (2016: 1390) also found that in the Czech Republic there was a low adoption rate of ZBBS by manufacturing SMEs and this was influenced largely by contingency factors such as firm size and the level of education of the owner/manager.

A generalisation study conducted by CIMA (2009) from developed and developing countries (Europe, Asia, Africa and the rest of the word) showed that most SMEs used a budgetary system to some extent. Since the results were generalised and did not provide any insights into the adoption of ZBBS by South African SMEs, it was inconclusive. However, a study by Maduekwe and Kamala (2016: 190) found that most Cape Metropolis SMEs adopt sales budgets, purchase budgets and cash budgets rather than ZBBS.

2.6.3 Decision support systems (DSS)

Despite the changing times, the primary role of a manager in an organisation still remains the same. Bonczek, Holsapple and Whinston (2014: 12-14) confirm that a manager is in charge of decision making. Currently, as technology has replaced manual systems, managers need to be constantly updated on the latest technological advances. A decision support system plays a major role in management practices as it is able to collect, store and process financial, as well as non-financial, data which is then used internally in order to report externally. In management accounting research, much emphasis has been given, for instance by Zanuttigh, Simcic, Bagli, Bozzeda, Pietrantoni, Zagonari, Hoggart and Nicholls (2014: 218) to the fact that technological innovations, organisational growth and human-machine systems are fundamental to the success of DSS. This is further supported by Kaplan and Atkinson (2014: 303) who explained that an organisational decision-making system is embedded with a human information processor, a mechanical information processor, or a human-machine information process system, that is designed to assist management in reaching their organisational objectives.

Not much emphasis has been given to DSS adoption by SMEs, but its relevance and reliability amongst large organisation has been evident. Taticchi, Garengo, Nudurupati, Tonelli and Pasqualino (2015: 6477) state that part of the reason why DSS is not often adopted by SMEs is due to contingency factors.

This may be caused by the characteristics and complexity of SMEs, targeting underspecified problems faced by SMEs, a combination of models or techniques used by SMEs, enabling features of a complex system, if any exist in SMEs, and their adaptability to change (Taticchi *et al.* 2015: 6477). However, Bhattacharya, Mohapatra, Kumar, Dey, Brady, Tiwari and Nudurupati (2014: 704) found that there was sufficient application of DSS in manufacturing organisations in the UK, and a performance measure approach was implemented to ensure that decision making was identified with the organisations goals.

2.6.3.1 Cost Behaviour (CB)

Novák and Popesko (2014: 90) state that cost behaviour is a mechanism that allows most managers to have a direct influence on decision making as it shows how revenues and costs deviate along with various levels of activity. Furthermore, Dalla-Via and Perego (2014: 755) agree with other scholars that cost behaviour is an essential component that assists management when it comes to decision making. Prior findings of other scholars show theoretical models based on cost behaviour, concluding that the assumption of relationships existing between costs and activities are systematic (Banker and Byzalov 2014: 45; Anderson and Lanen 2009: 48110). The major elements of CB are fixed costs, variable and mixed costs.

The majority of studies endorsed contingency theory and emphasised that one key factor that influences the adoption of MAP by the business owner was the owner's level of education – indicating that the knowledge, skills and expertise that one needs to have in order to effectively manage a firms' resources and to facilitate effective decision making, lies with the level of education possessed by the owner/manager (Maziriri and Mapuranga 2017: 20). In addition, it was evident that an awareness of cost behaviour by the owner, influences their ability to take an informed decision.

2.6.3.2 Cost Volume Profit Analysis (CVP)

Ihemeje, Okereafor and Ogungbangb (2015: 7) explain that cost volume profit analysis is a tool that assists management with useful information through analysing the relationships within the organisation, in conjunction with the selling prices, sales and production volumes. The significance of this tool is that it enables management to plan and control the scarce resources of an organisation while ensuring that it deals with the various relationships consisting of sales, cost, volume changes, and taxes as well as profits (Kim 2015: 23). It is noticeable in Management Accounting research that few scholars have investigated this application tool amongst manufacturing SMEs. However, it was shown that in developed countries such as the United States, Canada and Australia, CVP is still relevant and widely adopted by manufacturing firms (Armitage *et al.* 2016: 32; Ahmad and Leftesi 2014: 10).

2.6.3.3 Investment Analysis (IA)

Investment analysis has been defined as a method of weighing the profitability or risk of an investment (Kafuku, Saman, Sharif and Zakuan 2015: 1594). These investments may include, but are not limited to, portfolio management and capital budgeting (Baños-Caballero, García-Teruel and Martínez-Solano 2014: 333). According to Gigler, Kanodia, Sapra and Venugopalan (2014: 362) investment analysis is widely used in large companies but not in SMEs. In the context of manufacturing SMEs, it has been established that the adoption rate of these tools is low (Satiman, Abu Mansor and Zulkifli 2015:18). This appears to be caused by a lack of available finance (Kapkiyai and Kimitei 2016: 23).

2.6.3.4 Financial Analysis (FA)

According to Niresh and Thirunavukkarasu (2014: 57) financial analysis is a process that looks at the organisation's performance by using financial statements in order to evaluate the organisation’s, or its projects’, budgets and any other related financial issues, in order to exercise effective decision making.

The components of a financial analysis consist of an income statement, balance sheet, cash flow statement, profit planning, pricing, working capital management and financial structure (Ehiedu 2014: 81; Omar, Koya, Sanusi and Shafie 2014: 185). Most scholars have agreed that financial analysis uses historical data to evaluate the risks of future projections (Hartnett and Romcke 2015: 103; Angilella and Mazzù 2019: 1786). However, SMEs have shown little interest in preparing such analysis as they have limited knowledge. There is thus a gap in understanding how SMEs prepare and present such financial analysis, since there are no statutory requirements that must be followed as a guideline for these enterprises (Majocchi, Dalla Valle and D'Angelo 2015: 320).

2.6.4 Pricing Policy (PP)

A pricing policy is essential for determining the total cost associated with the products or services of an organisation. The cost of sales, and sales as well as profits are generated from there (Ambe, Evangelou, Govender, Koortzen and Ziemerink 2017: 360). Much of this is strongly influenced by the external environment in which an organisation is trading. According to Sinclair *et al.* (2017: 170) there are three major factors that influence the pricing policy of an organisation those being customers, competition and costs. Therefore, cost controls will play a major role in how organisations determine their pricing strategies.

In economics, pricing policy works hand in hand with the law of supply and demand and this also influences the market conditions which operate when suppliers have a monopoly. Here they clearly have a competitive edge (Klychova *et al.* 2014: 193; Hyginus, Wabuji and Christian 2019: 58). It is very important that an enterprise establishes a good pricing strategy, aligned with its objectives and with the assurance of customer satisfaction.

2.6.5 Management Reporting Systems (MRS)

A management reporting system is a vital aspect of the control system which is established by management to ensure that the information provided is relevant, accurate and is communicated timeously. This information is transmitted through reports and/or statements prepared using both financial and non-financial information (Johnson 2015: 272). However, many scholars have shown that the majority of SME owners/mangers do not have any knowledge of MRS and so fail to compile such reports due to their lack of accounting knowledge or business background, lack of experience or lack of the funds required to outsource a professional accountant. This function therefore ends up in the hands of the owner, who may create incomplete, inaccurate and/or unreliable reports (Johnson and Schaltegger 2016: 493). The preparation of reports for SMEs is the sole responsibility of the owner/manager, and in most studies it has been shown that these reports are not in line with the generally accepted accounting standards which a qualified accountant would produce (da Silva Laureano, Cardoso Vieira Machado and da Silva Laureano 2016: 142).

2.6.5.1 Segment Reporting (SR)

According to Accounting Standards (AS) 17, segment reporting is used to report financial information regarding the different products and services offered by the enterprise in its various trade locations. However, because of its complexity, it is not compulsory for SMEs to comply with such reporting standards. Nonetheless, Kozubíková, Belás, Bilan and Bartoš (2015: 47) explain the importance of such reporting even for these enterprises, as they enable the spotting of different profit rates, growth escalations and future opportunities, as well as the risk associated with each segment. This is also supported by Bohušová (2014: 18), who discusses how, in Europe, they want to harmonise the International Financial Reporting Standards (IFRS) to SMEs. Since there are no set norms to follow for this spectrum of entities, it is challenging for most SMEs to identify and report on the right segment performances (Belás, Bilan, Ključnikov, Vincúrová and Macháček 2015: 48).

2.6.5.2 Balanced Scorecard (BSC)

Kaplan and Norton (1996: 18) explain that a balanced scorecard is a framework or approach used by management to support an organisation's financial as well as non-financial objectives. A BSC should set out the organisation's vision and strategies by an examination of its activities. Many scholars have identified the benefits of adopting a BSC, seeing it as the best way of ascertaining the organisation's vision and strategic planning (Sitawati, Winata and Mia 2015: 53; Nogning and Gardoni 2015: 5). The survival of an organisation, according to this framework, is incorporated in four business aspects which are: financial, customer service, internal processes and organisational capacity (Fooladvand, Yarmohammadian and Shahtalebi 2015: 952). As the customers are the final users of the products or services that the organisation offers on the market, it is crucial to assess their level of satisfaction with these products or services and this can be done through service ratings (Nguyen 2018: 29). Wennersberg, Engeskar, Panteleeva and Helgesen (2016: 150), elaborating on the financial aspect of the framework, refer to financial performance which is measured using a management tool called the return on investment (ROI). The majority of large manufacturing companies adopt this tool.

The internal process looks at how efficiently the business activities are carried out (Manafi and Subramaniam 2015: 386). This is measured against how much a new product consumes in lead time, as well as the minimisation of the unit costs of a product or service. Mansouri and Goher (2016: 59) explains that organisational capacity looks at the organisation's ability to attain, maintain and expand on its knowledge and innovation, and this is measured against the rate of retention of employees, or the flow of new product development ideas. Major studies have shown that the balanced scorecard is adopted with success by large manufacturing firms as well as by service firms (Awadallah and Allam 2015: 95; Elbanna, Eid and Kamel 2015: 113). This indicates that there is a need to investigate the adoption of the 'balanced scorecard' approach and, in the SME literature, this gap has been identified for future research.

2.6.5.3 Product Profitability (PP)

Chen, Wang and Qiao (2013: 75) state that product profitability mainly focuses on establishing the difference between product sales and the total cost associated with a product over a specified period. Brierley (2016: 85) indicates that if the products are not able to yield high profits, management should develop ways to reduce the cost associated with that product. However, most scholars have indicated the usefulness of such a tool in management accounting research and their studies concluded that a significant number of UK SME owners prepared and used product profitability in their operating units (Drury and Tayles 2006: 405; Moreno-Moya and Munuera-Aleman 2016: 763).

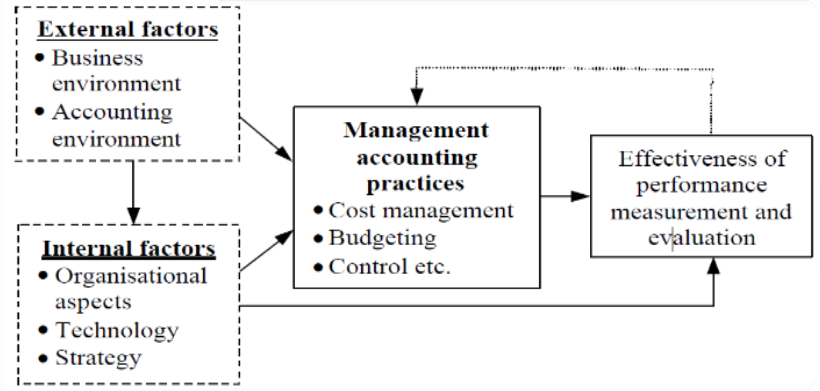
2.6.5.4 Customer Profitability (CP)

Customer profitability is a tool used to identify revenues, cost and profits against each client of the organisation (Brierley 2016: 86). It is the responsibility of management or the management accountant to have control over their customer base in terms of categorising their profitability or non-profitability. Čermák (2015: 16) found that the majority of studies related to customer profitability indicated that the ABC approach was adopted as a measure CP.

Since the sustainability of an organisation is based on customer satisfaction, it is the responsibility of the marketing department, or of management, to analyse which customers generate the most profits in order to maintain customer satisfaction. This indicates that manufacturing SMEs need to invest in attaining, managing and maintaining customer satisfaction by adopting the relevant tool within their functions.

2.7 THEORETICAL FRAMEWORK- CONTINGENCY THEORY

Figure 2.1: Contingency Theory



Source: Haldma and Laats (2002)

The contingency-based theoretical framework was first introduced to the management accounting literature in the mid-1970's (Otley 1980: 413). The framework was formulated based on organisation theory which encompassed both behavioural and organisational aspects in the management accounting field. The framework identifies both the external and internal factors that have an influence on the adoption of MAPs in the organisation (Otley 2016: 59). Consequently, this can be aligned to manufacturing SMEs as they are also exposed to these factors (Ahmad 2014: 238).

Otley (2016: 46) cites Otley (1980: 413) in explaining that the contingency theory of management accounting is “a theory that must identify specific aspects of an accounting system which are associated with certain defined circumstances and demonstrate an appropriate matching”.

Therefore, contingency theory cannot be uniformly used for all categories of business as it includes a variety of factors that interlink with the individual business structure (Ismail and King 2014: 5; Taylor and Taylor 2007: 849). However, it is suggested that the particular features of an appropriate accounting system will depend upon the specific circumstances in which an organisation finds itself (Ahmad and Mohamed Zabri 2015: 763). Most scholars have commented on management accounting research with regards to contingency theory in developing countries such as Malaysia, China and India. These scholars found that the major internal factors encompassed technology and the organisations' strategies, while the external features included the uncertainty of the market or business as well as the competition (Ahmad and Mohamed Zabri 2015: 763). According to Waweru, Hoque and Uliana (2004: 677), as supported by Zor, Linder and Endenrich (2019: 661) in the South African context, technology has had a direct impact on the adoption of MAPs and relates to the information systems applied by the SME. The adoption of contemporary MAPs was linked to the age, technical skills and business knowledge of the SME owner as well as to the technology incorporated in the business (Oyewo 2017: 490).

This study therefore intends to explore both external and internal factors influencing the adoption of MAPs by manufacturing SMEs. As discussed above, these factors predominate in establishing suitable MAPs for SMEs. However, the factors identified in the framework will be extended in this study, as the researcher intends to identify other factors influencing the performance of manufacturing SMEs within a South African context.

2.8 THE INFLUENCE OF MAPs ON SMEs AND FACTORS AFFECTING THEIR ADOPTION

As discussed above, management accounting practices can play a crucial role in enabling managers to run their businesses more effectively, by facilitating the decision making process, improving business performance, and providing and sustaining a competitive edge (AlKhajeh and Khalid 2018: 3). According to Amoako (2013: 74) and Yazdanfar and Ohman (2014: 443) MAPs are very influential in supporting business growth and in improving the profitability of a business. It is argued that this can only be achieved by adopting the relevant MAPs and Accounting Systems (AS) which are the responsibility of the business owner/manager. As discussed above, various factors impact on the adoption and usage of MAPs amongst manufacturing SMEs, including, but not limited to: the size of the firm, the training of staff and the availability of resources (Rickards and Ritsert 2018: 28). The level of education and knowledge of the owner/manager also has a significant impact on the type of MAPs adopted by different firms and countries (Kalkhouran, Rasid, Sofian, and Nedaei 2015: 51). For example, in Ghana, as an emerging economy, a low rate of MAPs adoption by SMEs was attributed to the lack of education amongst the SME owners (Amoako 2013: 74). Again, the low adoption rate of MAPs by South African SMEs has also been attributed largely to low business skills (Mungal and Garbharran 2014: 76; Lekhanya 2016: 3).

The majority of scholars have identified key factors which are regarded as indicators of what drives, or influences, the adoption of MAPs by SMEs in general, as well as those factors specifically related to manufacturing SMEs (Jamil, Mohamed, Muhammad and Ali 2015: 625; Andersén and Samuelsson 2016: 478). It has been established empirically that the adoption of MAPs affects manufacturing firms' profitability and sustainability (Giannacourou, Kantaraki and Christopoulou 2015: 548; Senftlencher and Hiebl 2015: 597).

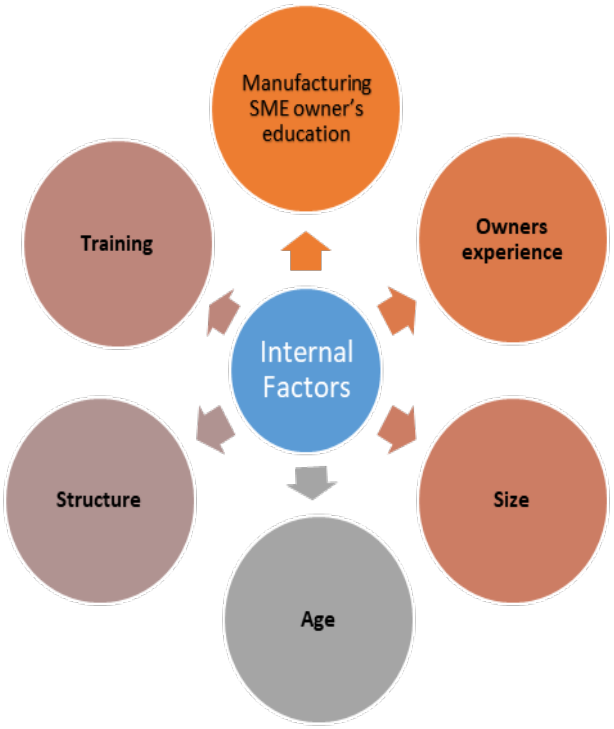
Furthermore, Amara and Benelifa (2017: 56) show that it is important for firms to harmonise the more sophisticated MAPs as these will critically influence the operations of the firm, and this increases the need for informed decision making by the SME owner.

It is therefore very important to identify the specific factors which have an influence on the adoption of MAPs by SMEs. For the purpose of this study the factors have been identified as either internal or external. These are discussed further as follows:

2.8.1 Internal factors affecting the adoption of MAPs

Authors such as Borgia and Newman (2012: 181) and Lekhanya (2016: 3) have regarded lower levels of education as a critical component that hinders the growth of the SMEs in South Africa. For SMEs, or any type of business, to be sustainable and grow, education is required amongst their managers if they are to adopt the relevant MAPs (Lande, Shrivastava and Seth 2016: 618). Amoako (2013: 73) agrees that a business can only be sustainable if management has the relevant qualifications to improve business performance. Again, Balios *et al.* (2016: 3) and Manxhari, Veliu and Jashari (2017: 189) argue that most organisations need to have management which has the necessary expertise, experience and knowledge about organisational operations. Cant and Wiid (2013: 707), citing Olawale and Garwe (2010: 730), agree that there are various internal factors that influence the adoption of MAPs by SMEs. These include the availability of finance, sound infrastructure, management skills, investment knowledge, information technology adoption and an understanding of the costs of production. The resource constrains of an SME, such as inadequate management accounting skills and training deficiency amongst management and staff, can put in question the adoption of appropriate MAPs (Lavia López and Hiebl 2014: 82). Amongst these factors, the dominant ones were seen to be: education, experience and training. These factors will now be discussed separately below.

Figure 2.2: Internal Factors influencing the adoption of MAPs



Source: Jamil, Mohamed, Muhammad and Ali (2015); Amoako (2013); Blair and Marcum (2015); (Azudin and Mansor 2018); Senftlencher and Hiebl (2015) and Whittaker, Fath and Fiedler (2016)

Figure 2.2 is a composition highlighting the most common internal factors which have some level of influence on the adoption of MAPs by manufacturing SMEs. The study will consider the role played by each of these factors in the adoption of MAPs by the manufacturing SMEs located in and around Durban.

2.8.1.1 Manufacturing SME owners' education

Education is known to add to, or to create, the knowledge and skills which are needed for making informed decisions in the business world (Littlewood and Holt 2018: 528**;** Andersén and Samuelsson 2016: 618). SMEs depend on the owner/manager to exercise informed decision making for the business which means that the level of education has an influence on the type of MAPs adopted within the firm (Jamil, Mohamed, Muhammad and Ali 2015: 625).

Thus it is generally agreed that the performance of an organisation is strongly influenced by the owner's level of education (Neneh 2018: 180). This is also applicable to manufacturing SMEs where it is necessary that the owner/manager should possess an appropriate level of education to direct the business's performance (Maziriri and Mapuranga 2017: 16). While, Omsa *et al*. (2018: 80) found that Indonesian medium sized enterprises did not view the level of education as significant in adopting strategic MAPs, Azudin and Mansor (2018: 224); Ahmad (2017: 344) and Ahmad and Mohamed Zabri (2015: 766) found that Malaysian manufacturing SMEs had difficulty in integrating or adopting MAPs without the SME owner/manager holding some level of education or knowledge. Ghazilla, Sakundarini, Abdul-Rashid, Ayub, Olugu and Musa (2015: 662) agreed that controlling the day-to-day operations of a firm, as well as sound decision making, depend to a significant degree on the SME's owner/manager, and that his or her level of education or knowledge critically influenced the type of MAPs adopted. Yeboah (2015: 17) found in their study that SME owners/managers holding a university degree and post-graduate education achieved more progressive sales growth through adopting suitable MAPs, than SME owner/managers who held only a high school education (Omsa *et al.* 2018: 80). Jevwegaga, Ade-adeniji, Ibidunni, Olokundun, Borishade, Falola, Obaoye and Ogunniyi (2018: 6) also found that the business performance of Nigerian SMEs was significantly influenced by the education levels of their managers.

2.8.1.2 Owners experience

According to Blair and Marcum (2015: 249) the level of business experience of the SME owner/manager also has a direct impact on the enterprise's performance, growth and survival rates. However, unfortunately, it has been shown that most SME owners/managers lack experience of operating a business and they therefore hardly know which MAPs are suitable for their business (van Scheers 2016: 350). Ng and Kee (2018: 255) confirm that for any business to be sustainable, experienced management is required, and one of the key characteristics of good management is an innovative approach towards adopting MAPs.

The kinds of experience required in order to control the functions of an SME may include: knowledge of legal contracts, human relations, accounting and the environment (Henriques and Catarino 2015: 386). Baporikar, Nambira and Gomxos (2016: 190) also identified that manufacturing SMEs' failure to adopt MAPs was due to lack of experience amongst SME owner/managers. Handling resources effectively also requires some level of experience and this has an influence on the enterprise's performance as well as on the implementation of the specific MAPs which will be adopted by a firm (Asah, Fatoki and Rungani 2015: 308). Again the study conducted by Lampadarios (2016: 75), found the owner/manager's level of experience to be one of the most significant drivers of the adoption of MAPs as did Vanauken *et al.* (2016: 6). These authors were also able to confirm that the adoption of MAPS led directly to improved performance, growth and sustainability.

2.8.1.3 Size of Firm

The size of a firm has an impact on the type of MAPs adopted within the enterprise whether traditional or contemporary (Azudin and Mansor 2018: 224; Hu, Mason, Williams and Found 2015: 981; Cosenz and Noto 2015: 227). In support of this, Ahmad and Mohamed Zabri (2015: 765) indicate that there are different types of MAPs that can be easily adopted by particular SMEs depending upon the size of the firm. Abder-Kader and Luther (2008: 7) show how larger companies easily adapt to contemporary MAPs due to their well-developed infrastructure and greater access to resources as compared with smaller enterprises. Equally, it has been shown that size is a driving element in the use of traditional costing and budgeting systems (Elhamma 2015: 977) as there is a link between size and the use of performance measures (Hoque and James, 2000: 2). The larger the organisation the more complex structure required to effectively design and control the use of MAPs. On the other hand, Chenhall and Langfield-Smith (1998: 3) and Ezeagba (2017: 8) argue that the size of a firm does not necessarily indicate the type of MAPs that will be adopted, but instead this is more likely to be influenced by the approach of top management.

Dang, Li and Yang (2018: 160) explain further that the size of a firm can be categorised in various ways which include the turnover, the turnover of employees, the total assets, or the market value of equity, and that this then determines the type of MAPs that will be adopted and tailored to meet the individual firm's objectives. Based on this, it is clear that the adoption of MAPs can be divorced from the size of the firm.

2.8.1.4 Age of the Firm

Yeboah (2015: 23) finds that firms which have been in existence for over six years' experience significant sales growth when they adopt relevant MAPs. AlKhajeh and Khalid (2018: 3) found that, in South Africa, MAPs can be adopted by the SMEs as early as the start-up phase as long as the firm can see a need to advance its strategy and enhance its performance. However, the modernised MAPs are generally used in a more sophisticated way by firms who have been through the development phase (Popescu, Ceptureanu and Ceptureanu 2017: 620). Younger SMEs, those with less than three years' experience, have difficulty in getting finance from banks, which makes it difficult, in turn, for them to adopt the relevant MAPs that could be of value to them (Wang 2016: 168). Consequently, younger firms often lack experience in adopting sophisticated MAPs and this impacts their ability to grow (Igwe, Ogundana, Egere and Anigbo 2018: 186). It can therefore be concluded that the age of a firm impacts significantly on the MAPs adopted by an SME.

2.8.1.5 Structure of the Firm

Senftlencher and Hiebl (2015: 574) state that the adoption of strategies for using both financial and non-financial information does not require an organisation to have a complex structure, but helps to provide aid and support for the functioning of the organisation, irrespective of its structure. However, scholars have found that the *nature* of an organisation's structure plays a major role in the type of MAPs adopted (Ipinnaiye, Dineen and Lenihan 2017: 884).

According to Otley (2016: 46), since MAPs have a diversity of structures, it is important that the individual SMEs establish the most suitable MAPs for integration into their particular business structure. Specifically, for manufacturing SMEs, the structure implemented by the firm is important for establishing the MAPs capable of enhancing product development and sustainability (Gandhi, Thanki and Thakkar 2018: 676). The structure of a firm, and changes in firm size, impose a significant influence on the types of MAP adopted by SMEs in general, but more specifically by those in the manufacturing sector, as their functions need to be supported by only those MAPs capable of ensuring viability (Gentile-Lüdecke, de Oliveira and Paul 2019: 6). Some scholars find that SMEs with simple structures and limited resources do not really need to adopt MAPs (Kalkhouran, Rasid, Sofian and Nedaei 2015: 52). However, for manufacturing SMEs to expand, it is important that they establish opportunities by using the latest MAPs if they are to develop into large firms (Suh and Lee 2018: 574) and again, Ahmad and Mohamed Zabri (2015: 763) argue that even though these firms do not have complex structures, MAPs adoption is still considered important to promote structural changes and growth.

2.8.1.6 Training of Staff

The skills, knowledge and competencies of an SME owner/manager can be improved through training which will effectively enhance the adoption of MAPs (Whittaker, Fath and Fiedler 2016: 125). Dincer and Acar (2017: 14845) also consider that staff training can be seen as a prerequisite for innovation and for successfully adopting newer MAPs. Likewise, Maes and Sels (2014: 143) argue that training plays a major role in gaining a competitive edge in the market by developing the various capabilities of a firm's staff. This will allow manufacturing SMEs to create innovative strategies for enhancing their business performance, product life cycle and sustainability (Omri 2015: 195).

Ghebrihiwet (2019: 464) and Ipinnaiye *et al.* (2017: 886) add that training allows a firm's employees to gain better knowledge concerning the adoption of MAPs and also increases their work competencies, which will enable them to perform more effectively. de Jesus Pacheco, Carla, Jung, Ribeiro, Navas and Cruz-Machado (2017: 2285) agree that training has a positive influence on the growth of enterprises, although there are other studies, for instance that by Padachi and Bhiwajee (2016: 242) which failed to provide evidence that training provided to SME owner/managers and staff improved the enterprise's performance. This may be due to the factors established by Antonioli and Della Torre (2016: 312) who found that most organisations fail to facilitate post training follow-up sessions, to measure staff levels of competency after training.

2.8.2 External factors affecting the adoption of MAPs

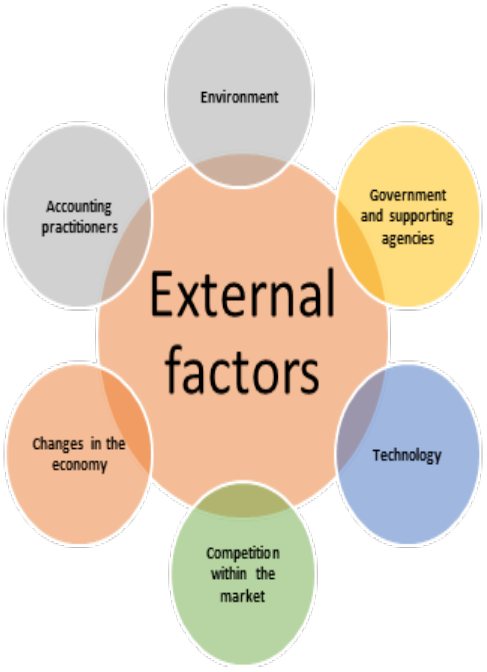
Government policies and supporting agencies have been shown to be the external factors that are the most influential in SME development (Jamak, Ali and Ghazali 2014: 577). This is of great concern since the government benefits from SMEs through tax returns, yet there is often a failure in providing incubation for these enterprises. Maas and Herrington (2006: 6) cited by Phillips, Moos and Nieman (2014: 86); Manxhari *et al.* (2017: 189) argue that new SMEs are often not aware of the supporting agencies such as Khula, SEFA and SEDA, while several researchers have argued that government effectively holds back the successful growth of SMEs through tax collection (Beck and Demirguc-Kunt 2006; Taylor and Taylor 2007: 849).

Ismail and King (2014: 4) list several factors as the main causes of SMEs' failure including changes in the external environment, restrictive labour laws, the Employment Act, failure to network with others, inflation, petrol hikes, and problems with suppliers. They believe that all of these challenges inhibit the adoption of MAPs by most manufacturing SMEs (Cant and Wiid 2013: 707).

Olawale and Garwe (2010: 730) point out that the external environmental factors are not controlled by the business and it is therefore hard for management to decide which external factors can be disregarded, as they all have some impact on the business' operation. Also, these factors have been identified as having an influence over the adoption of MAPs and as a result have an important impact on the economic growth of these enterprises. Most scholars are aware of the impact of external environmental factors on the adoption of MAPs. These factors include: the economic environment, market success, networking with others, crime, corruption, labour and restrictive regulations (Lekhanya 2015: 221; Ho, Ahmad and Ramayah 2016: 37; Msomi *et al*. 2019: 5). However, for this study, only the factors mentioned below were identified and examined in order to attain a better understanding of their implications for the adoption of MAPs for manufacturing SMEs.

Figure 2.3 below represents key external factors extracted from the literature that were identified for the purpose of addressing the reasons why manufacturing SMEs adopt certain types of MAPs. After careful consideration of prior literature, the common external factors identified are discussed below.

Figure 2.3: External Factors influencing the adoption of MAPs



Source: *Jamali, Lund-Thomsen and Jeppesen (2017); Oparaocha (2015); Karadag (2015); Goldstuck (2015).*

2.8.2.1 Environment

Since the market is constantly changing with the advent of new technologies, product developments or other advances, so the environment in which businesses operate changes (Jamali, Lund-Thomsen and Jeppesen 2017: 13) and SMEs in the manufacturing sector are also faced with having to deal with these changes. The global nature of current markets creates pressure for all types of business, forcing management to constantly change their business processes. Environmental responsibility is another major component for SME owners/managers to consider – they need to be aware of their environmental performance and impact (Jamil, Mohamed, Muhammad and Ali 2015: 620). Climate in particular can have an impact on the sustainability of a business (Csutora and Harangozo 2017: 460). Sustainability issues that arise through climate change include overpopulation, loss of biodiversity, deforestation and poverty, as well as limited access to water (International Energy Agency 2011).

Furthermore, large companies have been shown to be able to account more easily for carbon emissions than SMEs due to their limited finances and resources (Szigeti – Harangozo 2016: 299). Literature is increasingly seeing the need for investigating SMEs role in climate change as well as securing their sustainability in this environment.

Massive changes in the environment, dynamic technological change and innovation within products and markets, have transformed the competitive environment, while the risks remain uncertain (Dalberg 2011; Abdelzaher and Abdelzaher 2017: 358). In this situation it is important that SMEs seek a competitive edge and the expansion of their share values. However, in order to maintain a competitive edge, SMEs need to constantly adapt to the changes in the environment and to work hard to maintain customer loyalty (Cardoş, Pete, and Cardoş 2014: 190). These factors force manufacturing SMEs to diversify the management of their scarce resources, pioneering planning, controlling, decision making, risk and better appraisal systems within their businesses. Several authors such as Jarvenpaa (2009); Chavan (2009); Sunarni (2013) as cited by Cardoş *et al.* (2014: 189) emphasise the significance of adapting to changes in the business environment, competition and global influences to enhance the performance of business operations by adopting relevant MAPs.

2.8.2.2 Government and supporting agencies

Since these enterprises are considered to be major contributors to the economy, government agencies have been established which are designed to assist SMEs in accessing capital and to provide them with the necessary funding for their day-to-day operations (Oparaocha 2015: 870). Asah *et al.* (2015: 318) explain that awareness of such agencies by SME owner/mangers helps in facilitating the needs of management for funding, and enables them to gain or access training in the competencies required to adopt MAPs. However, these agencies have generally only been recognised for providing financial assistance and training, but little emphasis has been placed on them as networking platforms that may lead to exploration of the possibilities of adopting relevant MAPs (Oparaocha 2015: 871). In South Africa, there are many government agencies that were established to assist manufacturing SMEs by providing funding and advice as well as capacity development as to how to improve business performance effectively. These government agencies include SEDA, Khulula Enterprise Finance and Ntsika Enterprise Promotions (Agwa-Ejon and Mbohwa 2015: 3). They were established as an aid to any type of SME. In order to sustain these enterprises, the government also set aside R1.4 billion to provide incubation funding, assisting with start-up capital, mentorship and the alleviation of financial distress. However, many scholars have noted that most SMEs are unaware of such agencies and as a result they are often not receiving any government support (Dlamini 2017: 3; Ayandibu and Houghton 2017: 137). This contributes to the high business failure amongst manufacturing SME. Bushe (2019: 7) argues that SMEs have replaced the government's role by providing more employment opportunities than the government. It is therefore imperative that manufacturing SMEs use these government agencies in order to get the necessary funding, advise or mentorship as well as training that will assist them, amongst other things, in adopting the most relevant MAPs to fit their needs (Gomes, Vendrell-Herrero, Mellahi, Angwin and Sousa 2018: 738; Msomi *et al.* 2019: 5).

2.8.2.3 Technology

Technology is one of the major means of gaining a competitive edge for any business, enabling greater efficiency by making the production process faster (Pillay, 2016: 1). According to Bharati and Chaudhury (2015: 91), it is generally agreed that the use of technology by manufacturing firms is a tool that promotes product innovation, increases direct or integrated communication between the various functions in the organisation, and allows for flexibility. However, technological innovation is a major concern across all manufacturing SMEs in a diverse global market, as upgrading their technologies is costly (Karadag 2015: 27). In this regard, it has been found that most manufacturing SMEs have a low adoption rate of MAPs due often to a failure to use the kinds of technology which would allow them to benefit from lower production costs (Karadag 2015: 27). Yeboah (2015: 5) has shown that most SME owners/managers who are not formally educated cannot adapt to either existing or newer technologies, and in an American study by Bharati and Chaudhury (2015: 93) medium sized firms were shown to be more aware of the new technologies than were smaller firms.

There is clearly a great need for businesses to implement the most relevant MAPs and these can be facilitated by use of the latest software (Giotopoulos, Kontolaimou, Korra and Tsakanikas 2017: 67). Technology enables the adoption of more sophisticated MAPs which leads to higher business turnover (Martí and Quas 2018: 400). However, in order to cater for this, compatible technologies, adequate support from management, sufficient firm size, resources, and infrastructure are all required (Schneider, Janvrin Ajayi and Raschke 2015: 721).

2.8.2.4 Competition within the market

All firms want to be preferred over their competitors. This requires them to have a competitive advantage and this can be achieved by the four components: quality, delivery, low cost and flexibility (Hussain, Ajmal, Khan and Saber. 2015: 792).

A country's economy depends heavily on the manufacturing sector and this means that there are more market pressures that exist in that sector, and more competition requires more manufacturing firms to adopt the most strategic MAPs in order to realise their business value (Ho *et al.* 2016: 37). Grubic and Peppard (2016: 168) urge that it is the skills, experience and knowledge of MAPs, that drive a competitive edge for manufacturing SMEs in the market.

Marketing by manufacturing SMEs plays a major role in maintaining the right level of customer satisfaction, product specifications, and innovative production processes (Rekarti and Doktoralina 2017: 615). It is evident that technology enables manufacturing SMEs to adopt newer or more modern MAPs thus gaining a greater market share (Soto-Acosta, Popa and Palacios-Marqués 2017: 429). It was demonstrated in a study conducted in Indonesia that SME owners/managers who could not identify their own internal and external strengths due to insufficient resources resulted to them losing their competitive edge (Rekarti and Doktoralina 2017: 615). Other scholars raised concerns over incomplete and inaccurate bookkeeping, noting this as a hindrance to accessing finance compared to their rivals in the market who have more complete records (Koskey 2016: 8). Thus, according to Andersén and Samuelsson (2016: 467) a firm's competitive advantage is driven by many and diverse elements. For most manufacturing SMEs, product innovation creates an even greater need to incorporate new technologies in the production process and to strengthen their application of strategic MAPs in order to keep up with competitors (Msomi *et al*. 2019: 6). In conclusion it can be seen that strong competition in the market is an important reason for SMEs to adopt the most relevant MAPs (Ocloo, Xuhua, Akaba, Addai, Worwui-Brown and Spio-Kwofie 2018: 127).

2.8.2.5 Changes in the economy

A dynamic change in the economic structure that results from technological advances, politics or market regulations can cause a shift in society and culture globally or nationally (Spacey 2018).

Cant and Wiid (2013: 708) agree and argue that all types of business, including SMEs, need to be aware of the diversification that arises in the market and how to deal with this.

South African SMEs have been affected by a diversity of challenges: high interest rates, foreign exchange fluctuations, price rises, job losses, corruption, the introduction of modern technologies, communicable diseases, and government regulations, as well as load shedding (Goldstuck 2015). The World Wide Worx survey report 2015 stated that *"Based on the findings of the SME Survey this year 2015, finance, competition and crime are some of the most pressing issues. However, crime no longer claims first place. Instead, frequent and prolonged power failures rank as the most concerning issue for SMEs."* This has been a recurring issue even after four years in South Africa. As it stands in 2019 massive load shedding was experienced in the first quarter which caused major production interruptions, customer dissatisfaction. and damages to equipment (The small business sites, 2019). Furthermore, the same issue is affecting manufacturing SMEs as Stage 4 of load shedding in South Africa estimates that around about 4 000 megawatts (MW) of electricity is cut off. This idle time can last up to 4 hours and leads to enterprises losing sales. This directly impacts SME performance as the majority of these enterprises do not have back-up generators. It is estimated that on average R2 billion a day of SA's productive economy is lost during stage 2 hours of load shedding (Lang, Regional General Manager at Business Partners Limited 2019).

Load shedding therefore directly affects the profitability and sustainability of SMEs. These recurrent outages have caused a huge strain on most manufacturing SMEs' output as a result of spoilages and unrecoverable losses and they have increased business failure rates amongst these enterprises. Moreover, in South Africa recession has faced the country over the years and this directly affects the trading of SMEs and could possibly have an influence on the adoption of MAPs.

McNamara, Murro and O'Donohoe (2017: 131) found that in Europe the inflation rate had a negative influence on the performance of SMEs as a proportion of GDP, as well as affecting their access to finance in the banking sector. Ipinnaiye *et al.* (2017: 884) concurred that inflation not only affects performance but also is a negative driver for levels of growth, output, pricing and costing of products or services under the circumstances endured by SMEs.

Other factors that were identified by scholars as part of the changes in the economy were crime, in which South Africa was ranked 72 in world in the GEMs report 2019, which also showed that crime had an impact on the firms' ability to survive (Sitharam and Hoque 2016: 279).

2.8.2.6 Accounting Practitioners (APs)

Accountants are professionals who render accounting services, as well as managerial and advisory services (Kirsten, Vermaak and Wolmarans 2015: 15). They understand the nature of the various entities and how these can benefit from a range of their services and thus they are equipped with knowledge and skills that can assist managers in achieving their company's objectives. The majority of SMEs who acquire such services aim to improve the performance of the firm (Carey 2015: 168). The rate of employing MAPs by SMEs is also very largely dependent on the affordability or availability of such resources (Cherry 2016: 8). Furthermore, Carey (2015: 168) indicated that in the USA, Australia and the United Kingdom, APs were highly appreciated by SMEs as being be able to provide valuable advice.

However, with scarce resources, the SME owner often ends up taking on the tasks which could be rendered by APs which then raises questions of accuracy and reliability of the financial information provided (Nandan 2010). When the owner/manager does not have sufficient accounting knowledge and skills, running a business may become complicated, information may be inaccurate, and this will have a negative impact on the decisions taken (Kirsten *et al.* 2015: 18).

Moreover, all decisions taken by a business owner have a direct influence on the business's performance and appropriate knowledge and skills are required. In South Africa, management accountants and APs can provide valuable strategic advice to SME owners, saving the businesses' resources and time according to Xero's 'In search of lost time' Report (2019). This report further indicated that accountants do not only provide advice to SMEs, but they are also equipped with the appropriate accounting technology.

2.9 SUMMARY

The literature discussed in this chapter involved, first defining what SMEs are, and the different categories were discussed in detail. It also emphasised the significance of SMEs, along with the shortcomings currently experienced by this type of enterprise. The chapter also covered the significance of management accounting, along with its evolution and its relevance to the operations of manufacturing SMEs. The development of MAPs was discussed and the various MAPs which have been introduced to improve the value of firms were explained. The question concerning which MAPs were implemented by manufacturing SMEs was discussed using the adoption rates of TMAPs versus CMAPs. This showed how MAPs are heavily influenced by the various internal and external factors that impact on manufacturing SMEs and thus on their ability and willingness to adopt specific MAPs. This was all brought together under the theoretical framework used for this study, which is contingency theory. This integrated the various internal and external factors that influence the adoption of MAPs.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

In the previous chapter an overview of the available literature on factors influencing the adoption of MAPs in manufacturing SMEs was provided. Contingency theory was used to identify the internal and external factors that have had an impact on the adoption of MAPs. The crucial role of the MAPs as an element of decision making for manufacturing SMEs was also explained.

This chapter unfolds the research methodology as well as the research design used in this study. The chapter begins by exploring the research design, after which it discusses the targeted population of the study and explains the data collection instrument chosen. The chapter will also discuss the data analysis used and the ethical considerations taken into account, along with the limitations, delimitations, reliability and validity of the study.

3.2 RESEARCH DESIGN

Picardi and Masic (2014: 8) define research as a process that encompasses procedures as well as objective methods with the aim of obtaining scientific knowledge on a specific topic, so that it is not dependant in any way on the subjective opinions of the researcher. A research design also provides a structure for how the research study will be conducted by setting guidelines for data collection and also for solving the phenomena at hand (Malhotra 2011: 16; Merriam and Tisdell 2015: 68). Creswell (2009: 3) explains that a research design is used to make an informed decision from a broad spectrum of prospective ways of attaining detailed data and conducting analyses. A research design is an agent used to provide assistance in extracting facts about the phenomenon established for the study (Leedy and Ormrod 2014: 96). Thus, the whole notion of a research design is to collect and process raw data into information by extracting pieces of the truth using appropriate research methods.

Sekaran and Bougie (2016: 95) indicate that the point of conducting a research study is to be able to collect data and process it into meaningful facts which can then be regarded as information, through a process of analysis, in order to solve the research problem. In this study the research problem was identified in Chapter One and was also justified in the literature review which provided evidence of the slow adoption rate of MAPs by manufacturing SMEs.

The chapter includes a discussion of the research purpose, the strategy, the quantitative approach chosen, the sample, and the data collection instrument used to solve the problem. In this study, data was collected from owners/managers and other decision making stakeholders of manufacturing SMEs. Data was collected by administering a questionnaire which was then coded and analysed using SPSS (version 26.0). Figure 3.1 gives a detailed overview of the methodology deployed in this study.

Figure 3.1: Overview of the research methodology deployed in the study

Source: Gupta and Gupta (2013)

The figure above represents the guidelines that were followed by the researcher in constructing the research methodology chapter. The full discussion of the research methods deployed in the study is explained in detail below.

3.2.1 Descriptive research design

Nzuza (2015: 51) and Ntoyakhe (2018: 55) are in agreement that the whole rationale for using descriptive analysis is to test if the variables concerned in the study are related to one another or not. According to Somekh and Lewin (2011: 221), descriptive research is a tool used to describe the variables rather than focusing on how the phenomena occurred. Polit and Beck (2014: 272) state that the aim of a descriptive research design is to observe, describe and document aspects of a situation as they occur naturally. Furthermore, Sekaran and Bougie (2013: 97) explain that descriptive research can be used to collect data which pronounces upon people and/or events or even on situations. Burns and Grove (2011: 518) add that a descriptive research design can be based on developing a theory, identifying current problems faced in practice, justifying current practice, making judgements, or determining what others are doing in similar situations. Moreover, the design can be used in either quantitative or qualitative studies (Collis and Hussey 2009: 71). In this study, the researcher was able to identify and group variables commonly impacting on the study through the frequencies formulated by the descriptive analysis. It was useful for the researcher to use descriptive analysis as it was easy to compare variables and also to identify the factors that were influential in the study (Lacobucci and Churchill 2010: 59).

Burns and Grove (2011: 518) explain that descriptive research focuses on gaining information concerning the characteristics within the field of study. It shows just how certain themes or events relate to each other (Brink, van der Walt and van Rensburg 2012: 114). Descriptive analysis illustrates the results of the study by means of tables, mean, standard deviation, frequencies, graphs and percentages. The following descriptive analysis methods were adopted in this study:

Percentage graphs are graphics that display numerical results, based on the various factors concerned in the study, with the aim of showing their overall impact (Maree 2010: 220). In this study, the use of percentage graphs was deployed to analyse and depict the results concerning the factors influencing the adoption of MAPs by manufacturing SMEs.

Percentage tables: Aaker, Kumar, Leone and Day (2012: 452) explain that a percentage table gathers common answers from the respondents and expresses the proportion of those answers from the total in the form of percentages.

In this study the primary focus was on establishing factors influencing the adoption of MAPs by the manufacturing SMEs located in the Durban area. The main aim of the study was therefore to determine the factors that influence the adoption of MAPs by these firms. This was achieved by looking at the owners'/managers'/other relevant stakeholders' responses based on the MAPs adopted in their different enterprises. Therefore, the association of those variables was descriptive in nature. The researcher describes the various characteristics that influenced the owners/mangers/other stakeholders to adopt the types of MAPs deployed in their enterprises.

3.3 RESEARCH APPROACH

According to Sarantakos (2005a: 41) research methodology is a process of gathering data in order to make meaningful sense of it, and thus to draw conclusions about what is perceived, or to change what is known. Furthermore, research methodology is aimed at producing knowledge and understanding of a social or physical phenomenon through an intensive search project (Kumar 2011: 1). Cibangu (2010: 178) describes research methodology as the overall approach that integrates the theoretical framework or paradigm. The most common type of research adopted by organisations is aimed at solving current issues or at generating a new body of knowledge, and these methods are known as either applied research or basic research (Sekaran and Bougie 2009: 6). For the purpose of this study, basic research was used to address the research aim and objectives. The discovery of facts is achieved through the methods applied or conducted, which can be quantitative, qualitative or mixed. Therefore, the methodology acts as an agent that assists the researcher in producing meaningful information that is informative and sufficient to influence a decision (Sekaran and Bougie 2009: 6). For the purpose of this study, a quantitative method was used in order to establish factors and to justify the adoption of MAPs by manufacturing SMEs using the values generated.

3.3.1 Quantitative Method

Gog (2015: 45) states that quantitative research uses the quantified data to statistically substantiate findings which enhance the body of knowledge. Moreover, Polit and Beck (2012: 739) refer to the quantitative method as a mechanism that assists the researcher to investigate the phenomenon at hand through quantifiable measures that can yield precise measurements of the phenomenon. The whole notion of a quantitative method is to enable the researcher to address the phenomenon in terms of values that can be analysed mathematically through statistics or models (Greetham 2009: 180).

This method dominates by providing figures which validate facts gathered through a statistical approach (Leed and Ormond 2013: 74).

According to Creswell (2013: 55) quantitative research is embedded in a positivist paradigm. For the purpose of this study, a quantitative research methodology was used with the intention of establishing, and also quantifiably measuring, factors influencing the adoption of MAPs by manufacturing SMEs with the intention of generalising the findings. This method works best with questionnaires, as this instrument captures the facts presented through statistical analysis. Moreover, the quantitative method assisted the researcher in understanding the reasons why manufacturing SMEs decide to adopt certain MAPs in their enterprises. Subsequently, the researcher was able to identify and measure factors influencing the adoption of MAPs amongst manufacturing SMEs. This quantitative method involves three possible categories: descriptive, experimental or casual comparative research. The current study applied a descriptive research method. Creswell (2013: 155) explains that either experimental or survey research can be employed to fulfil a quantitative research study. Under the survey method, a questionnaire is regarded as the best instrument to aid data collection as well as to formulate statistical data. Therefore, in this study a survey was selected in order to fulfil the research purpose. According to Patten (2017:13) a questionnaire is a research tool that is used to collect data from the respondents, usually comprising of set of questions that can be set in different styles with the purpose of extracting information once it has been analysed. This instrument should capture all necessary aspects required to address the underlining issues of the study, as identified by the researcher, to capture the views of the respondents.

3.4 POPULATION

Population refers to the entire category of individuals or the whole group of people, things or events that the researcher wishes to investigate (Sekaran and Bougie 2013: 240). Polit and Beck (2004: 50) add that 'population' refers to the aggregate of those conforming to the specifications which the research intends to investigate. A population is a pool from which a sample is drawn in order to generalise the findings (Gog 2015: 37). Saunders, Lewis and Thornhill (2012: 258) point to constraints or hindrances that may occur in reaching the targeted population including access to finance and limited time available. The researcher in this study targeted manufacturing SMEs based in Durban.

As cautioned by Leedy and Ormrod (2012: 35), a targeted population should be precise or specific in order to meet the aims of the study. In this study the population consist of manufacturing SMEs located in the city of Durban only. The established number of registered manufacturing SMEs in Durban is more than 1050, as reflected in the Durban Chamber of Commerce database (Department of Trade and Industry Report 2016/17). The adoption of MAPs (as the focus of the study) has been identified as involving very largely, large manufacturing firms whilst the literature has identified a serious gap in the adoption of these MAPs by manufacturing SMEs. The researcher wanted to establish why manufacturing SMEs were not adopting MAPS which could be so beneficial to their success, being designed to assist in evaluating, controlling and planning the best use of a firm's resources in order to maximise profit. This means that the owners/managers/other decision makers should have some sort of understanding or knowledge regarding the adoption of these MAPs. Therefore, this constituted the need for the researcher to choose this type of population. The sample of the study will be discussed below.

3.5 SAMPLING

Sampling is one of the most important aspects involved in a research process, as it helps inform the quality of inferences made from the findings discovered by the researcher (Rajkoomar 2015: 83). Sekaran and Bougie (2010: 266) explain further that sampling refers to selecting a suitable quantity derived from a specific population or group which is chosen by the researcher. Saunders, Lewis and Thornhill (2009: 151) add that sampling refers to the extraction of appropriate participants from the entire population. It can be split into two categories – probability and non-probability sampling. The targeted population was identified based on their knowledge of managing their business operations which was crucial for exploring the principal phenomenon of this study.

Table 3.1: Different sampling methods

Probability sampling	**Non-probability sampling**
This sampling technique guarantees that there is a definite chance of the member given selected (Zikmund Babbin, Carr and Griffin 2013: 392).	This technique does not guarantee members of the population that they will participate in the study (Vehovar, Toepoel and Steinmetz 2016: 18).
It is accurate, efficient and less costly (Neuman 2011: 241)	Most preferred when dealing with a small or large targeted population (Neuman 2011: 243). Sekaran and Bougie (2009: 276) state that sometimes non-probability sampling is the only way to obtain data.

Source: Sekaran and Bougie (2013)

A non-probability sampling technique includes quota sampling, convenience sampling, purposive sampling, self-selection sampling and snowball sampling (Adams and Lawrence 2015: 127). In this study, a purposive sampling technique was adopted over the other non-probability sampling techniques, in order to select the most appropriate participants who held the necessary capabilities and knowledge required to fulfil the objectives of the study (Sekaran 2016: 269). Since the researcher wanted to find out what factors influence the adoption of MAPs by manufacturing SMEs through a purposive sampling method, the researcher was able to reduce the time and cost associated with conducting the research by only focusing on those individuals who had the necessary knowledge or expertise, rather than targeting all staff employed in these enterprises.

Furthermore, the chosen sample frame focused on the specific characteristics required (Sekaran and Bougie 2010: 280). The researcher could not use any participants that were easily available to answer the questionnaire, but selected only owners/managers/other relevant decision makers of the manufacturing SMEs who met the criteria. Thus the subjects were carefully selected for their special knowledge and exposure regarding the issue under investigation. By choosing this approach the researcher was able to get a broad understanding from the participants based on their first-hand experiences in terms of which MAPs are adopted, and what are the factors that influenced them to use those MAPs in their manufacturing SMEs.

3.5.1 Sampling size

The sample size is important in research since the results of the study are generalised to the entire population based on the accuracy of the sample. In this study, the SEDA (2016) report indicated that that there were 74,976 registered manufacturing SMEs located in KwaZulu-Natal. Statistics have also shown that there are more than 1 050 registered and operating manufacturing SMEs in Durban (Department of Trade and Industry 2016/17). The total population in this is study is therefore made up of 1 050 manufacturing SMEs which are registered in the Durban Chamber of Commerce.

A population size consisting of more than 1 050 should have an estimated sample size of 202 according to Sekaran and Bougie (2010: 295). Sekaran and Bougie (2016: 269) also confirm that with a population of 1050 an estimated sample size of 202 is acceptable with a proportion level of 0.67.

Table 3.2: Sample Size

Manufacturing SMEs	1 050
Proportion	0.67
Sample Size	202

(Sekaran and Bougie 2010)

3.6 DATA COLLECTION INSTRUMENTS

Data collection refers to the means of sourcing information which provides aid to the researcher to solve the phenomenon identified in the study (Grove, Burns and Gray 2013: 691; Sarantakos 2005b: 126). Grove *et al.* (2013: 691) concur with Eriksson and Kovalainen (2011: 77) that data collected fall into one of two categories: either primary or secondary data. Mouton (2008: 71) defines primary data collection as entailing observations or interviews, and that secondary data involves all existing sources which include: conferences, textbooks, journal articles, newspapers, reports theses and dissertations, government documents and websites. The purpose of collecting the primary data was to capture real live data from the respondents. To source primary data, the researcher issued questionnaires to the various owners/managers/ and other decision making stakeholders of the manufacturing SMEs around Durban. There was a total of 202 business owners/managers and other decision making stakeholders who voluntarily participated in this study. The researcher handed out the questionnaires to these targeted participants in their manufacturing firms around the Durban area.

The participants were given enough time to answer the questionnaires which were collected by the researcher after they had been completed. Once all the questionnaires were collected the researcher captured the data on MS Excel in order to code the responses to the questions.

With the physical dissemination of the questionnaire to the targeted population proving to be costly and physically challenging, a survey approach was also incorporated. Groves, Fowler, Couper, Lepkowski, Singer and Tourangeau (2011: 2) state that a survey is a method of gathering data from a sample of entities. A survey can be carried out using four different methods of collection: personal; telephone; online; and postal (Schmidt and Hollensen 2006: 139). Sekaran and Bougie (2016: 143) argue that there are limitations involved when posting or emailing questionnaires as the respondents might ignore them, or be too busy to complete them, and this can be avoided by personally administering the questionnaires to the respondents.

The questionnaire used in this study addressed the fundamental issues pertaining to the research by compiling a list of questions specifically focusing on the factors influencing the adoption of MAPs (Fox and Bayat 2007: 88). The study focused on a large sample size of 202 participants. The questionnaire was designed with closed-ended and Likert scale type questions**.** Collecting data in this manner enabled the researcher to introduce the topic to the respondents and provided the researcher with an opportunity to explain the concepts involved, while encouraging the respondents to answer honestly. This was achieved by ensuring the anonymity and confidentiality of the respondents. The researcher collected the data between May and September 2019. This allowed the respondents sufficient time to complete the questionnaires.

3.6.1 Questionnaire

A questionnaire is a research tool that is used to facilitate the data collection process in a survey (Saunders *et al.* 2012: 416). According to Sekaren and Bougie (2010: 197); McMillan and Sehumacher (2006: 104) a questionnaire is one of the tools most preferred by researchers to gather information from a specific population that relates to the study. Saunders, Lewis and Thornhill (2016: 416) explain that questionnaires are designed scientifically to ask pre-defined questions in the same order to each respondent. However, there are different methods that can be used to gather information using this instrument, these being: a mailed survey, a personal encounter with the respondents, or a telephone survey (Sharma 2010: 145). In this study the researcher used both personal contacts and mailed surveys in order to fast tract the collection of data, as well as to get the information from the respondents who were most easily available. The questionnaire consisted of a five-point Likert scale which was used to ensure that the questions were directly focussed and elicited the degree of agreement felt by each respondent. They were closed-ended questions. The five-point Likert scale ranged from Strongly disagree (1), Disagree (2), Neutral (3) Agree (4) to Strongly agree (5). This was aimed at measuring the different preferences amongst individual respondents (Keele 2011: 49). A Likert scale measures the strength of attitude experienced by the respondents regarding the phenomenon which is the focus of the study (Kumar 2014: 191).

In order to maximise the full potential of collecting data using questionnaires, the questionnaire should be user friendly and appeal to the participants (Brace 2018: 06). Furthermore, the questions included in the questionnaire should be designed to fulfil the objectives of the study. All questions should be clear, logical and understandable to the respondents (Mathers, Fox and Hunn 2009: 24). To formulate the questionnaire questions, the researcher should consult with the relevant literature, which in this dissertation was discussed in Chapter Two (Patten 2017). The questionnaire was largely developed and influenced by the existing literature which formed the basis of this research study.

3.6.2 Design and layout of the questionnaires

Williman (2011: 97) states that the layout of a questionnaire requires careful consideration by the researcher. This can be time consuming and requires considerable skill. Gravetter and Forzano (2015: 386) advise that the format of a questionnaire should consist of an easy language style and questions which are well organised and easy to follow. Moreover, a questionnaire should be arranged in a logical manner starting with general questions, then transition to specific questions with a clear and logic sequence (Wimmer and Dominick 2011: 198). In this study, the questionnaire consisted of 40 questions (see Appendix D) which were divided into three sections these being:

- Section A- Biographical details
- Section B- MAPs used by manufacturing SMEs
- Section C- Internal and external factors influencing the adoption of MAPs

Section A focused on the respondents' biographical information such as gender, race, age group, number of years in the business, type of business, type of influence towards decision making, level of education and the type of capital used to start the business. All these questions were included in this section in order to identify the type of SME owner/manager or other decision maker who was responding, their type of business as well the owner/managers level of experience.

Section B focused on the various MAPs adopted by manufacturing SMEs, specifically to determine whether the MAPs adopted by these enterprises were aligned to their intended purpose in order to meet the needs of the business. This included questions from number 10-14 and were designed to investigate the costing aspects, budgeting techniques, decision making, pricing policy and strategies employed by manufacturing SMEs around the Durban area. The SME owner/manager or senior staff member also had to indicate how the adopted MAPs affected their operations as an enterprise. This was measured by the Likert scale questioning technique.

Section C focused on determining internal and external factors that influenced manufacturing SMEs to adopt MAPs. The first discussion was based on the **internal factors** and these questions range from 15-21 of the questionnaire. Again, to measure the intensity of the opinions given, a Likert scare ranking was used. The major themes reflected in this category were: education, experience and training; age of the firm; size of the firm and the structure of that particular manufacturing SME. The **external factors** were reflected in questions 22 – 40 and these were also divided into main themes, those themes being: the environment, government and supporting agencies; technology and advances; customer, competition and market innovation.

3.6.3 Pilot test

Doody and Doody (2015: 1074) identify a pilot study as a pre-testing method that is used to find out the feasibility of the study on a mini scale. Kumar (2014: 191) concurs that the pilot study is a research strategy that enables the researcher to see if respondents understand the questions administered in the research instrument. The purpose of conducting a pilot study is so that the researcher can test the particular instruments for validity (Blair *et al.* 2013: 517). It is crucial for a researcher to conduct a pilot study when administering a self-completed questionnaire (Mahlahla 2018: 78) in order to ensure that respondents have no issues in answering the questions. Gray (2009: 227) adds that the aim of a pilot study is to determine if the questionnaire has been appropriately constructed. This is to ensure that there are minimal possible errors in the final data collection instrument, as without pilot testing, irrespective of how careful the researcher is, errors may be present. Cargan (2007: 29) agrees that pre-testing of the questionnaire is necessary. All questions contained in the questionnaire need to meet the expectations of the researcher and must not be ambiguous (Saunders *et al.* 2009: 212). In this study, 20 respondents were randomly selected to participate in the pre-test. All of these respondents were independent from the targeted population and were not part of the final study.

These pilot respondents were first briefed about the topic, aims and objectives of the study, as well as the importance of their honest responses. They were given enough time to ask if they felt that any question/s or statement/s on the questionnaire were unclear. They also had to indicate if the questions were easy to read and understand, as well as easy to follow. The point of conducting the pilot was to help the researcher to identify any shortcomings in the questions and any ambiguity or problems experienced by the respondents. The pilot results showed that there was repetition in some questions, and that others were not exactly in line with the objectives of the study. This allowed the researcher to re-look at those questions and amend them to ensure that they met the aim and objectives of the research. Based on the results of the pilot study, and after taking into considerations all amendments required prior the main study, the researcher was able to conclude a final draft of the questionnaire which was free from error.

3.6.4 Administration of the questionnaire

The researcher consulted the Durban Chamber of Commerce data base for 2019 for manufacturing SMEs around Durban, and visited a number of these entities with the hope of persuading them to participate in the study. Once they had agreed, the questionnaire (see Appendix D) was delivered to the business owners/managers/ other decision influencers, in the morning and the researcher took time to go over the questions with the respondents. This allowed them to express any misunderstandings, as well as giving them an opportunity to ask questions. Prior to their participation, the respondents were asked to read the letter of information carefully and to complete the consent form (see Appendices A and B). The participants were all given an equal chance and no particular ethnic or community group was targeted. The questionnaire administered was standardised to the targeted sample of respondents drawn from the population.

The purpose of the survey was to assist the researcher to:

- Determine which MAPs were adopted by the manufacturing SMEs around Durban. The researcher believed that the participants were very knowledgeable regarding the phenomenon investigated (Matsosa and Benedict 2015: 30) and were therefore an appropriate group of respondents.
- Analyse, extract patterns, and draw comparisons from the information obtained in order to come to a conclusion (Zikmund and Babin 2012: 15). The conclusions sought were to assist in identifying significant challenges affecting the adoption of MAPs by the manufacturing SMEs operating around Durban.
- The respondent group needed to constitute a significant number of participants in order to qualify for quantitative research and for the information gathered from the sample to be generalised to the wider population (McMillan and Shumacher 2014: 25).

3.7 RELIABILITY AND VALIDITY

According to Klenke (2008: 51) reliability measures the consistency of the results drawn from a test or procedure, facilitated or issued under constant or similar conditions. Blumberg, Cooper and Schindler (2014: 195) explain that reliability measures research characteristics in line with the following elements: precision, consistency and accuracy. Jackson (2016: 62) adds that in order for reliability to be tested the scores derived should be consistent even when occurring within different time frames. Hence, in this study reliability was ensured through explicitly phrasing questions, asking clear questions and providing succinct questions. However, there are two commonly recognised restraints on reliability which need to be dealt with, these being: participants' bias and participant error (Sekaran and Bougie 2010: 270). An acceptable reliability coefficient is from 0.70 and above (Gupta and Gupta 2011: 66). The study used a pre-coded questionnaire to avoid any inconsistencies. Each question in the questionnaire was standardised in chronological order for all participants.

Since there is no specific standard for a ‘good’ questionnaire, the design of a questionnaire affects the results gathered from the respondents significantly and this has implications for the validity as well as the reliability of the findings (Saunders *et al.* 2009: 361).

Validity measures the degree of accuracy with which the questions were able to answer the questions which they were intended to answer for the study (Klenke 2008: 53). Saunders *et al.* (2012: 193) concur that validity deals with measuring or scaling accuracy in the instruments as a reflection of, and to confirm, what was intended to be measured. There are three types of validity approaches that can be adopted in a study, these being: face validity, concurrent and predictive validity, and construct validity (Klenke 2008: 57). These are discussed below:

- Face validity: deals with all elements of a variable and the extent to which questions make sense.
- Concurrent and predictive validity: evaluates the findings of the study against a theoretical hypothesis to confirm what is already known.
- Construct validity: a measure that cannot be standardised for all groups as the validity changes from one population to another.

In this study, face validity was applied to assess the appropriateness of the research instrument adopted to address the aim and objectives.

3.8 DATA ANALYSIS

Descriptive analysis is used when the researcher wants to identify the relationship between variables, and any differences amongst the groups involved (Moreland 2007: 165). The results of the statistics are represented by frequency or percentage tables; mean standard deviation and percentages are displayed on a bar graph. The data analysis will deal with the following:

- Bar graphs as explained by Nelson (2013: 12) can either be displayed as horizontal or vertical bars which show the comparison amongst categories.
- Cross tabulation is a tool used to compare a relationship between two heterogeneous variables (Rubin 2010: 88).
- Pie chart is a circular depiction with an area of 100% that represents the data.

According to Crossman (2014) data analysis is a process of systematically applying statistics and/ or logical techniques to describe and illustrate, condense and recap, and evaluate data. This study used the latest version of Statistical Package for the Social Sciences (SPSS) to analyse the data. SPSS consists of an integrated series of computer programmes that enable the user to read data from questionnaire surveys and other sources and be able to manipulate them in various ways in order to produce a wide range of statistical analyses and reports, together with documentation (Hall 2013).

The data collected from the questionnaires was analysed using SPSS version 26.0. for the descriptive analysis where cross tabulation, figures, tables and graphs were used to present the results.

3.8.1 Data preparation

Data preparation is a process which involves the manipulation of data into a suitable form that enables the data to be analysed and processed (Ngibe 2015: 47). The significance of processing these raw materials which are collected, is to transform them into meaningful information that will be used to answer the research questions (Zheng 2012: 71). An important stage involved in the data preparation is data coding (Ngibe 2015: 47). The data has to be processed as well as transformed into codes. Therefore, the questionnaires had to be pre-coded, which allowed the researcher to capture all the questionnaires that were completed by the respondents on the computer in order to form a data set. For each questionnaire a number was given by the researcher to distinctly identify it from the total.

3.8.2 Statistical analysis

Statistical analysis is the process that encompasses collecting, analysing and drawing conclusions from data that will make meaningful information. The data set was analysed using descriptive and inferential analysis methods with the intention of drawing conclusions from the sample and generalising it to the entire population. This would enable the researcher to collect, summarise and also analyse the data collected in order to reach conclusions concerning the objectives of the study (Peck, Olsen and Devore 2011: 7). Krishnasami and Satyaprasad (2010: 161) argue that the empirical need for statistical data analysis is to make meaningful sense of the large masses of data collected which is then summarised into an understandable form. The researcher used the results to form regression equations in order to test the acceptance or rejection of the factors that had been identified as influential for MAPs' adoption by manufacturing SMEs. The researcher identified trends and patterns and summarised the data. A quantitative analysis was adopted in order to report and display charts, graphs, tables and other relevant statistical tests.

3.8.2.1 Inferential statistics and Chi- square

Terr-Blanche, Durrheim and Painter (2006: 105) point out that a descriptive analysis shows the characteristics of a sample, as it is a reduced data set which was drawn from the population, therefore making it easier to interpret. Krishnaswami and Satyaprasad (2010: 161) concur that inferential statistics are key components in providing inferences or assumptions about the targeted population. Inferential statistics was used in this study in order to infer the findings and the conclusions pertaining to the critical factors influencing the adoption of MAPs by manufacturing SMEs in KwaZulu-Natal with specific reference to Durban. A chi-square test, a statistical technique that is used to examine the differences between categorical variables in the same population (Foley 2018), was employed in this study. Foley also states that a chi-square test could be used as a measurement to validate or provide an additional test for the observed frequencies of the study. Therefore, the chi-square test was used to test the statistical significance of the observed influential factors in this study.

3.8.2.2 Factor Analysis

Factor analysis is a statistical tool which is commonly used by researchers when conducting research surveys. This tool acts as an aid that reduces the number of questions or variables into smaller hypothetical factors (Willemse 2009: 209). Further to this, a factor analysis measures whether the items or variables measure the same thing. Hair, Black, Babin, Anderson and Tatham (2006) argue that a factor analysis has the ability to simplify data by identifying smaller factors that explain the variances which were observed from large variables. The matrix tables are preceded by a summarised table which reflect the results of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test. In order to test if the research is adequate to apply a factor analysis, the KMO result and Bertletts test should be run and yield measurements of 0.50 significant level or less than 0.50 respectively. In all instances, the conditions for this study were satisfied, which then allowed factor analysis procedure to be included as reference to the tests indicated below.

3.9 ETHICAL CONSIDERATIONS

According to Mella (2012: 45) ethical consideration refers to research policies or codes of conduct that are used to ensure that the study conducted does no harm, does not expose confidential information, nor does it force the participants to take part without their consent. None of the research activities carried out in the study had any intention of harming or causing any adverse reaction towards the participants (Buchanan, 2004: 38). Since the nature of the research is sensitive, a letter of consent/permission was provided by the researcher to the participants. The consent letter establishes the voluntary agreement by the participant and explains the benefits that the research could yield as well as the uncertainties involved (Johns 2016: 42). Gravetter and Forzano (2016: 101) emphasise that it is imperative that the researcher adheres to the ethical principles of respect, responsibility and honesty towards the participants taking part in their study.

With that being said, the manufacturing SME owners/managers and other decision making stakeholders were informed prior to participating in the study, that the study was purely for academic purposes. Permission was given after the participants read and signed the consent form. All manufacturing SME owners/managers or other decision makers were fully aware that they had a choice of participating or withdrawing from the study at any point. Each questionnaire was accompanied by the ethical clearance letter (see Appendix D) from the Faculty Research Committee (FRC) of the Durban University of Technology (DUT). All participants had to give consent prior to the start of the research. The questionnaire was administered only after this consent was given. All participants were also assured that none of their confidential information would be disclosed in public, as confidentially is an accepted norm when conducting research. No individual that took part in the study could be identified and this was expressed in the consent form as they had to tick an anonymity box. This was to ensure that the participants' information was protected. The questionnaire was distributed to each participant at their workstation and each was guaranteed anonymity. All the data collected from this study will be stored in accordance with the DUT Research Storage Guide.

3.10 LIMITATIONS

The study was limited to manufacturing SMEs operating within the perimeters of Durban. Therefore, the findings of this study cannot be generalised to all types of SMEs due to their diverse nature. However, the findings reached in this study could be used to improve, or help to explore, future endeavours for the adoption of MAPs by SMEs in general. Similarly, the findings reached in this study might be of interest to larger firms as well as to the South African government.

3.11 SUMMARY

This chapter covered the research design as well as its methodology. A quantitative method was adopted applying closed-ended questions developed in a questionnaire in order to address the objectives of the study. The pilot study which was conducted, as well as the distribution of questionnaires to the selected sample, were both discussed. The issue of validity and reliability of the data collection instrument was substantiated. The ethical clearance process was also discussed together with the process involved in attaining permission for conducting the study.

The next chapter discusses the results derived from the data which was collected, coded and analysed.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

The research methodology and research design were discussed in the previous chapter. As indicated in Chapter Three, a quantitative research approach was chosen for this study. A questionnaire was used to collect data from the manufacturing SME owners, managers and other relevant decision making stakeholders, with the aim of discovering influential factors affecting the adoption of MAPs. The current chapter will reflect the results obtained from the data analysis carried out and also discuss the outcomes gathered from these findings. The data collected from the respondents was coded and analysed using SPSS version 26.0. A descriptive statistical analysis involving cross-tabulations, graphs, tables and figures was presented based on the data collected from the respondents. Inferential techniques, namely correlation and chi-square tests, were used to interpret the levels of significance in the study.

4.2 DATA ANALYSIS

The findings of this study were analysed using a descriptive analysis and will be presented in the form of graphs, tables and frequencies. These findings were used to determine whether the objectives of the study were addressed. The objectives were identified in Chapter One as: to determine current practices used by manufacturing SMEs in the Durban area; to explore the internal and external factors influencing the adoption of MAPs by these manufacturing SMEs; and also to suggest guidelines for the adoption of MAPs by SMEs in the manufacturing sector in Durban. For each of the objectives outlined above, a research question was formulated in order to address that objective.

The findings were collected from the SME owners and managers as well as other relevant decision makers of manufacturing SMEs around the Durban area. These findings were then presented in the form of graphs, figures, cross tabulations and other means. As indicated in Chapter Three, a questionnaire was designed specifically for this study testing 45 items in order to measure at nominal or ordinal level. As indicated in Chapter Three, the questionnaire was broken into sections in order to measure the responses, and the sections were categorised as follows:

- Biographical data (SECTION A)
- MAPs used by manufacturing SMEs (SECTION B)
- Internal and external factors influencing the adoption of MAPs (SECTION C)

4.3 RESPONSE RATE

From the 202 questionnaires administered, only 150 were returned and regarded as valid whilst the balance of 52 was discarded as these were incomplete and could not be considered valid for the study. With regards to the completed questionnaires that were collected from the respondents, a 74% response rate was achieved. This was an acceptable rate of response since it was greater than 65% which is regarded as significant in order for an analysis to be carried out (Sekaran and Bougie 2010).

4.4 BIOGRAPHICAL DATA

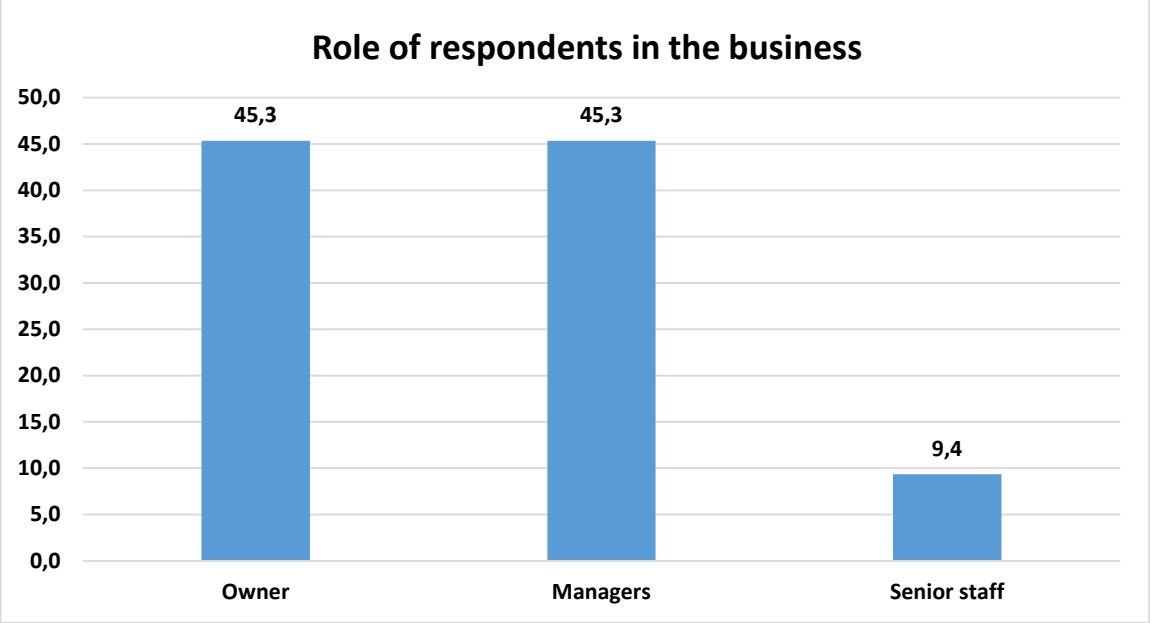
In this section, the results pertaining to the background of the respondents that participated in the study will be discussed. An overview of respondents was summarised and categorised into the following sub-sections: the role that the respondents play in the enterprise, gender, age, race, the number of years they have been in the business, the type of business, their occupation, their highest level of education, and their enterprise's annual turnover.

This was done in order to gather as much information as possible regarding the type of participants that were involved in the study. This knowledge was essential in order to demonstrate that the study targeted knowledgeable candidates that could provide relevant information necessary for the study. This information was also going to assist the researcher in addressing the current knowledge gap pertaining to the adoption of MAPs by manufacturing SMEs in the Durban area, and to be able to pinpoint the barriers to success facing these enterprises. The following results are based on the background of the participants in the study.

4.4.1 Role of respondents in the business

Based on Figure 4.1 below, there was an exactly equal proportion of 45.3% of SME primary management categories who participated in the study, whilst the balance of 9.3% was made up of senior staff members (other decision making stakeholders). This indicates clearly that most of manufacturing SMEs located in Durban were managed by either owners or managers. This also shows that the great majority of respondents had responsibility for decision making and, most importantly, for whether or not to adopt MAPs.

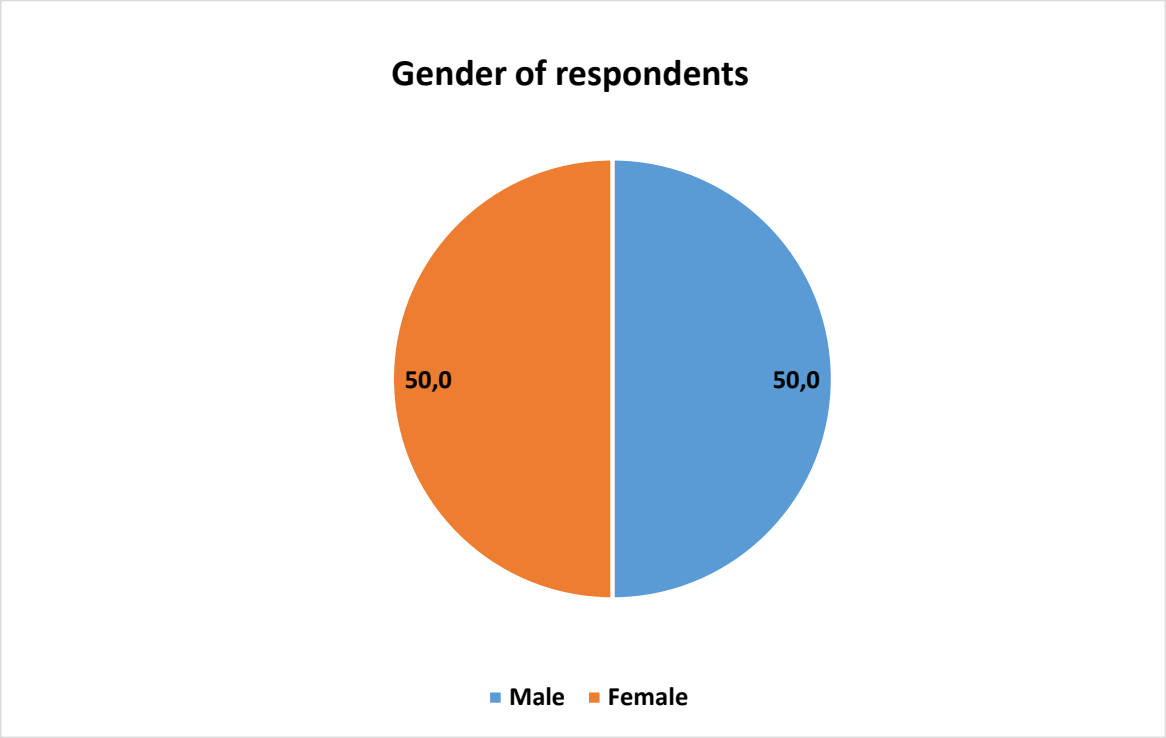
Figure 4.1: Role of respondents in the business



4.4.2 Gender of respondents

Figure 4.2 clearly indicates that half (50.0%) of the respondents were males and the other half (50.0%) were females. These findings show that there was an equitable distribution in the management portfolio as a balance of males and females participated in this study.

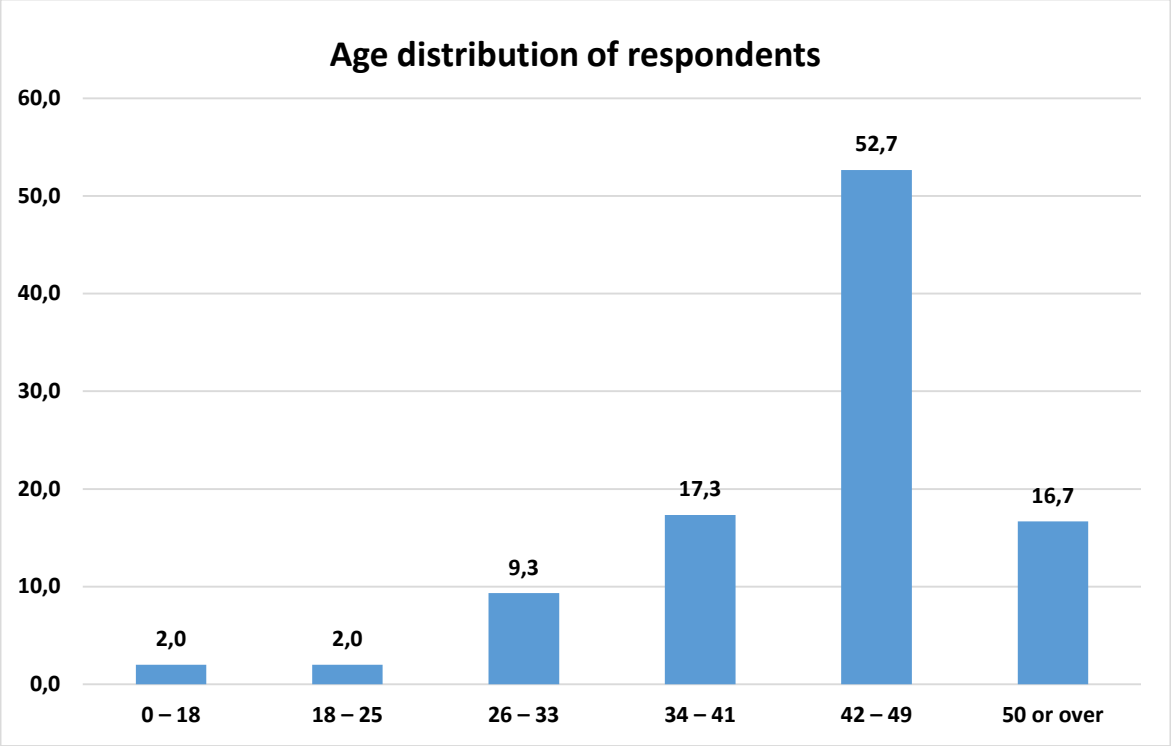
Figure 4.2: Gender of respondents



4.4.3 Age distribution of respondents

The age groups of the respondents involved in this study are reflected in Figure 4.3. This shows that the majority of respondents (52.7%) were between the ages of 42 and 49 years, while 17.3% were between the ages of 34 and 41 years. 16.7% of the respondents were over 50 years, while 9.3% were between 26 and 33 and only 4.0% of the respondents were under 25 years of age. Most respondents were therefore from the middle aged group.

Figure 4.3: Age distribution of respondents



4.4.4 Cross tabulation of gender and age group

A cross tabulation was used to identify the correlation between gender and age groups of the respondents. As reflected in Table 4.1 below, an even distribution amongst gender participated in this study 1:1 (50.0%: 50.0%) (p = 1.000). When exclusively observing the male category for the middle aged group, there were 50.7% males (n= 38), of which 48.1% represented males within the age group of 42-49 years and this constituted 25.3% of the total sample. When the female category only for the middle aged group were observed, 54.7% were females (n= 41). Within the female category, 51.9% were between the ages of 42 and 49 years. This category represented 27.3% of the entire sample. Therefore, more than half (n= 79) of the respondents were females between the ages of 42 and 49 years.

Table 4.1: Cross tabulation of gender and age group

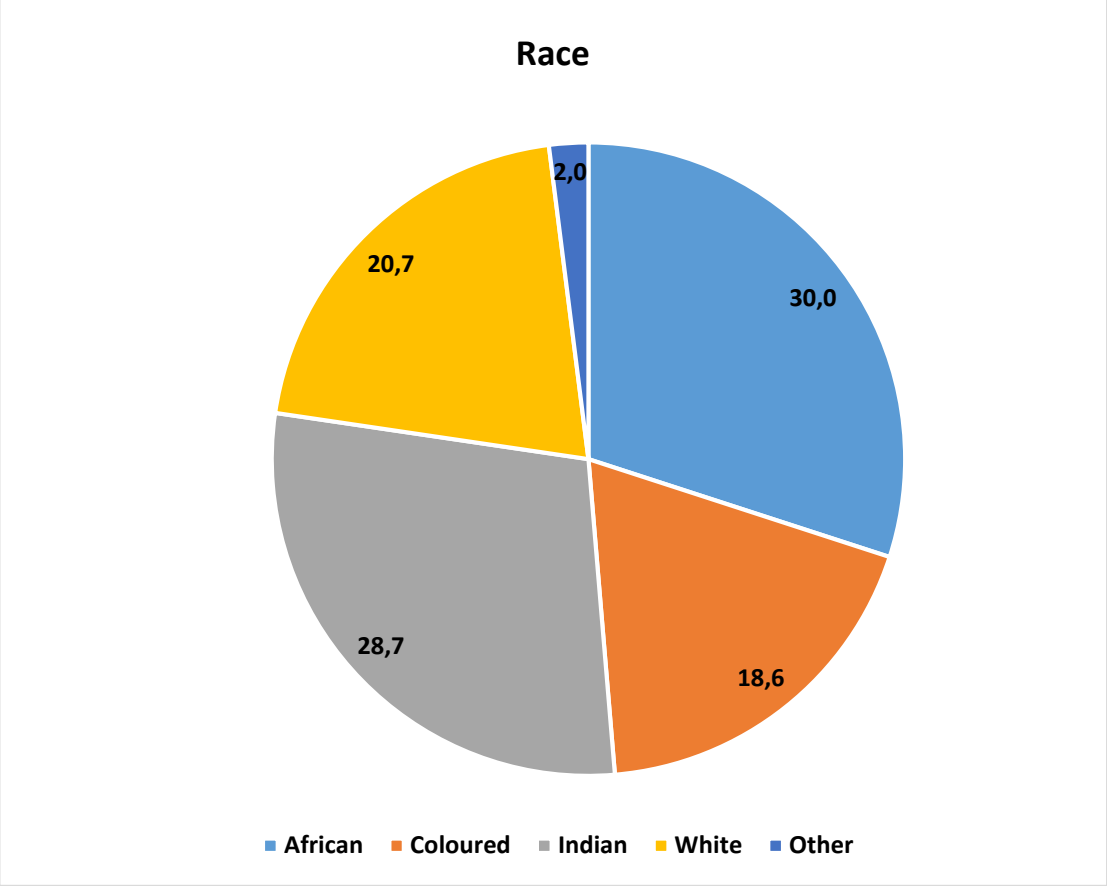
		Gender		Total
Age group		Male	Female	
0 – 18	Count	2	1	3
	% within Age group	66,7%	33,3%	100,0%
	% within Gender	2,7%	1,3%	2,0%
	% of Total	1,3%	0,7%	2,0%
18 – 25	Count	1	2	3
	% within Age group	33,3%	66,7%	100,0%
	% within Gender	1,3%	2,7%	2,0%
	% of Total	0,7%	1,3%	2,0%
26 – 33	Count	8	6	14
	% within Age group	57,1%	42,9%	100,0%
	% within Gender	10,7%	8,0%	9,3%
	% of Total	5,3%	4,0%	9,3%
34 – 41	Count	10	16	26
	% within Age group	38,5%	61,5%	100,0%
	% within Gender	13,3%	21,3%	17,3%
	% of Total	6,7%	10,7%	17,3%
42 – 49	Count	38	41	79
	% within Age group	48,1%	51,9%	100,0%
	% within Gender	50,7%	54,7%	52,7%
	% of Total	25,3%	27,3%	52,7%
50 or over	Count	16	9	25
	% within Age group	64,0%	36,0%	100,0%
	% within Gender	21,3%	12,0%	16,7%
	% of Total	10,7%	6,0%	16,7%
Total	Count	75	75	150
	% within Age group	50,0%	50,0%	100,0%
	% within Gender	100,0%	100,0%	100,0%
	% of Total	50,0%	50,0%	100,0%

4.4.5 Race

As depicted in Figure 4.4 below, 30.0% of the respondents were African, while 28.7% of the respondents were Indian, with 20.7% of the respondents being white and 18.6% of the respondents being coloured. Only 2.0% of the respondents were from other racial groups such as Asian. This means that manufacturing SMEs in Durban area are owned and managed by diverse racial groups.

Furthermore, this shows that the level of decision making more specifically in relation to the adoption of MAPs may be influenced by the different cultural backgrounds. This is supported by Shepherd, Williams and Patzelt (2015: 33) who also found that SME owners come from diverse groups having different values, nationalities and cultural heritages, and that these differences do affect their decision making.

Figure 4.4: Race

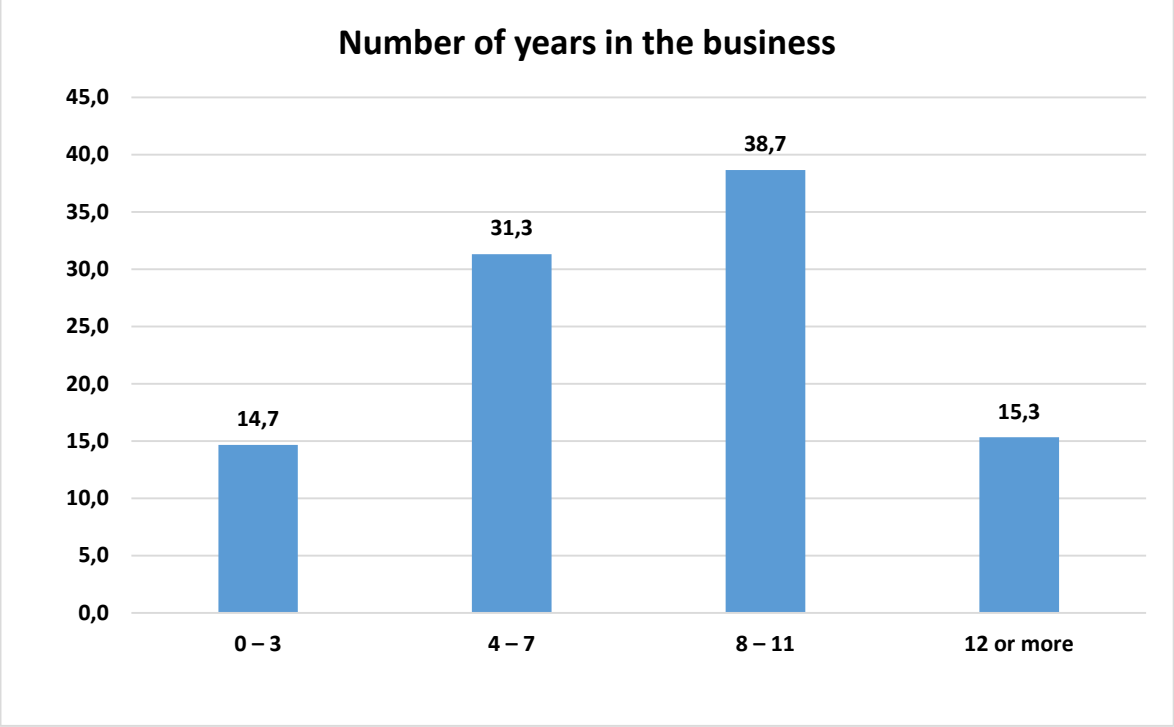


4.4.6 Number of years in the business

As depicted in Figure 4.5 below, 38.7% of the respondents' businesses had been in existence between 8 and 11 years, while 31.3% had existed for between 4 and 7 years, with 15.3% of the businesses having been in existence for more than 12 years, and only 14.7% being new businesses, having been in existence for less than 3 years.

This indicated that more than half of the manufacturing SMEs operating in Durban are still at a growing phase which means that they are at a critical stage when they need to find and implement sustainable means to grow their enterprises. This could be achieved by adopting relevant MAPs for guiding their business processes and activities more effectively.

Figure 4.5: Number of years in the business

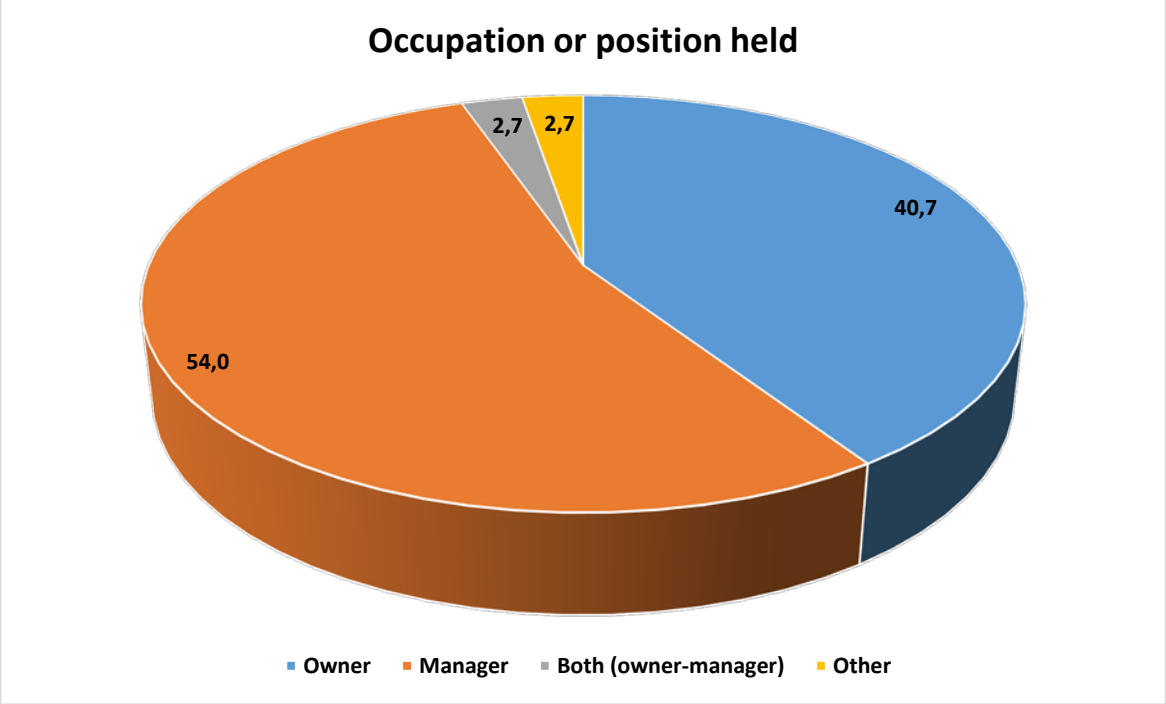


4.4.7 Occupation held

Based on Figure 4.6 below, more than half (54.0%) of the respondents were managers, while 40.7% were owners, with 2.7% being owners and managers and only 2.7% of the respondents were senior staff. These findings show that the respondents sometimes held multiple positions, meaning that they play an integral part in decision making.

The role played by the respondents might not always be the same as their occupational title, as these enterprises allow for owners to be managers or to hold both occupational titles.

Figure 4.6: Occupation held

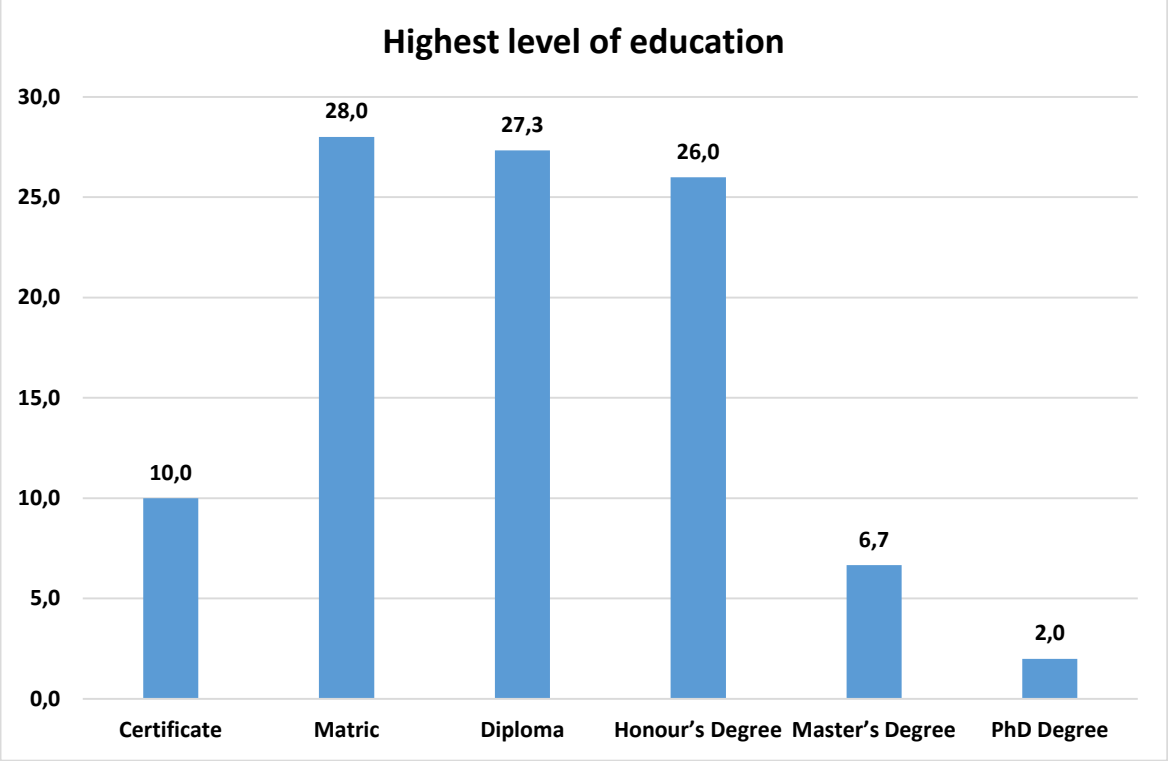


4.4.8 Highest level of education

The majority of respondents (62.0%) had a post school qualification – either a diploma or a degree. Slightly more than a third of the respondents (34.7%) had a postgraduate degree.

It is evident therefore that the majority of the respondents had a post matric qualification. It was also clear that manufacturing SME owners view education as an important strategic tool, and that this can influence their capabilities for adopting MAPs.

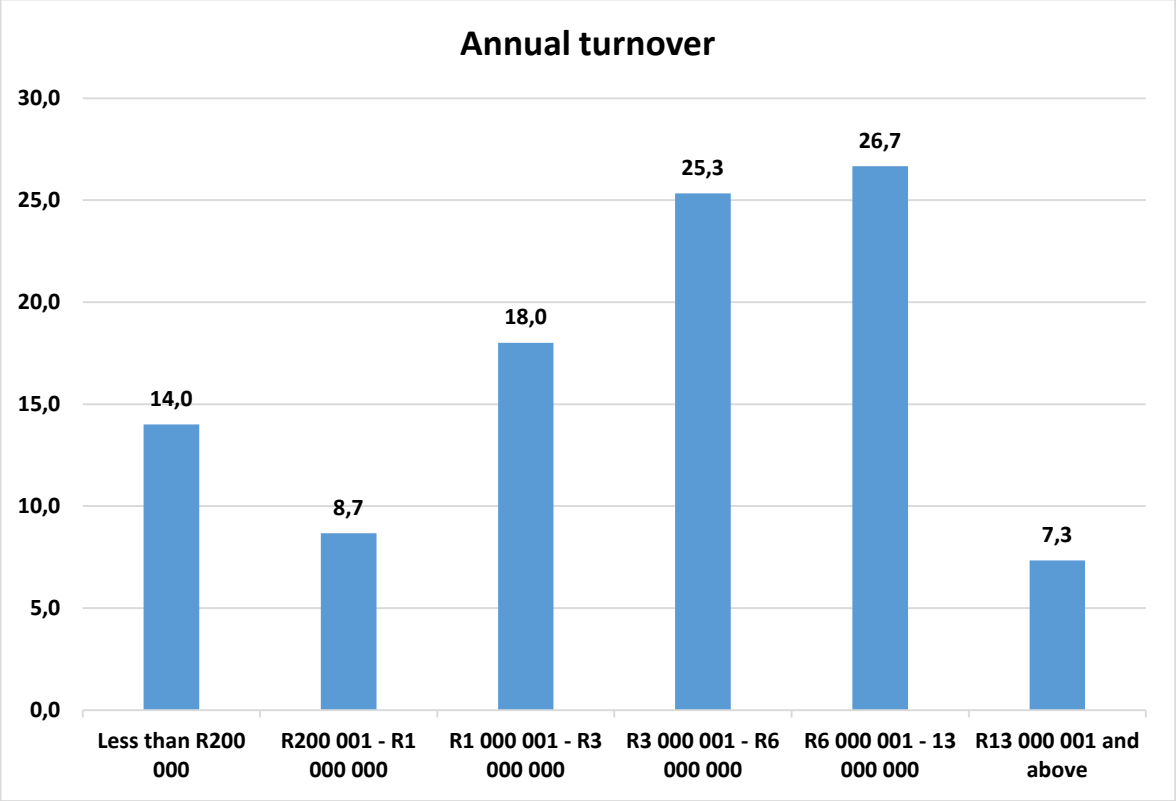
Figure 4.7: Highest level of education



4.4.9 Annual turnover

As reflected in Figure 4.8 below, 14.0% of the respondents indicated that their businesses make less than R200 000 in annual turnover, while 8.7% indicated that their businesses make between R200 000 to R1million in annual turnover, with 18.0% making between R3 million and R6 million. 25.3% of the respondents indicated that their businesses make between R6 million to R13 million in annual turnover and only 7.3% of the respondents indicated that their businesses make over R13 million. Based on the revenues reflected above, it would appear that these enterprises have a sound accounting system that manages the use of these revenues effectively.

Figure 4.8: Annual turnover



4.5 ANALYSIS ACCORDING TO THE RESEARCH OBJECTIVES

Section B and C of the questionnaire focused on addressing the objectives of the study which were noted in Chapter One. A five-point Likert scale format was used to measure the responses and the questionnaire layout was shown in this format (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree). The next section discusses the findings related to the objectives of the study.

4.5.1 Objective 1: Current practices used by manufacturing SMEs in Durban

Section B of the questionnaire was used by the researcher to achieve Objective 1 of the study. As illustrated in Chapter Two, MAPs used by manufacturing SMEs in this study focused on cost accounting systems, planning systems, decision support systems, pricing policy and management reporting systems. The findings gathered from the respondents in order to address this objective are discussed below:

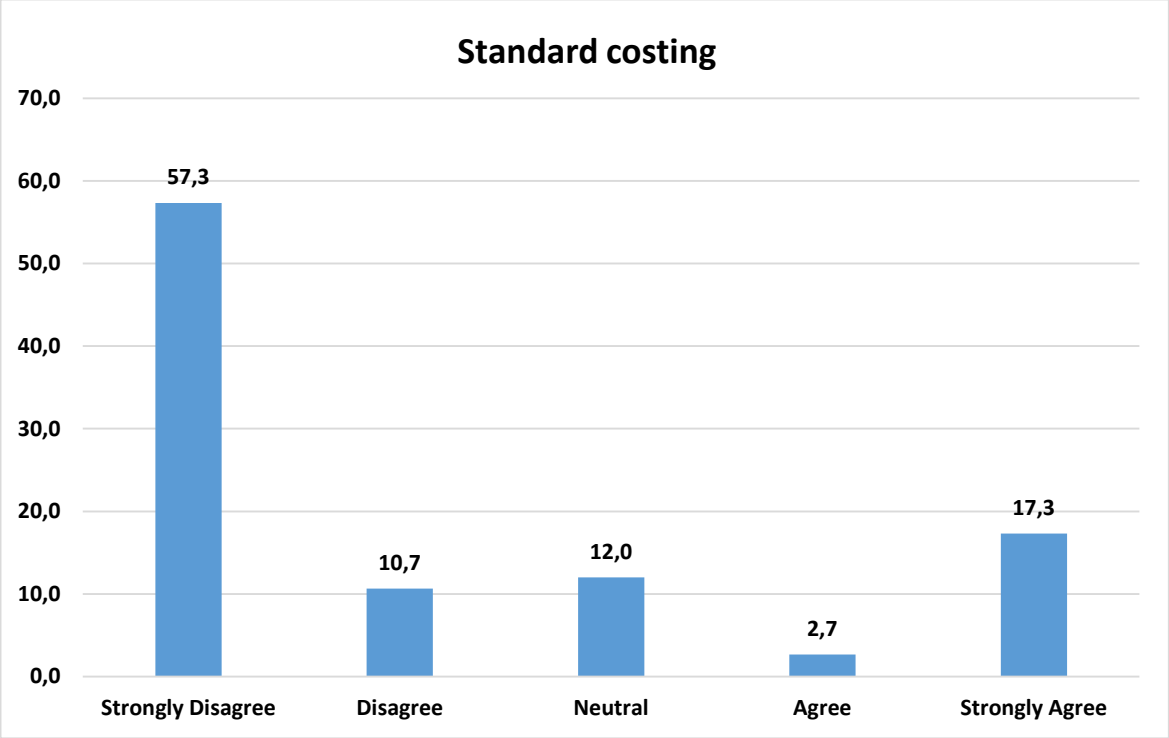
4.5.1.1 Cost accounting systems adopted to control expenditure

This section discusses findings that relate to cost accounting systems adopted to control expenditure.

- **Standard costing**

As indicated in Figure 4.9, over half (57.3%) and a further 10.7% of the respondents either strongly disagreed or disagreed respectively that standard costing was adopted in their enterprises to control expenditure. Only a few respondents (17.3%) strongly agreed and only 2.7%, agreed. Based on these findings, it is evident that the majority of the respondents (68.0%) did not adopt standard costing as a cost control tool. This finding concurs with Tabitha and Oluyinka (2016: 49), who found that standard costing had lost its relevance and was no longer adopted by most manufacturing SMEs. Kocakulah, Stott and Manyoky (2017: 3) also noted the disadvantages of implementing a standard costing system, as it is time consuming, requires exhaustive labour costs, and is also regarded as an expensive system to purchase.

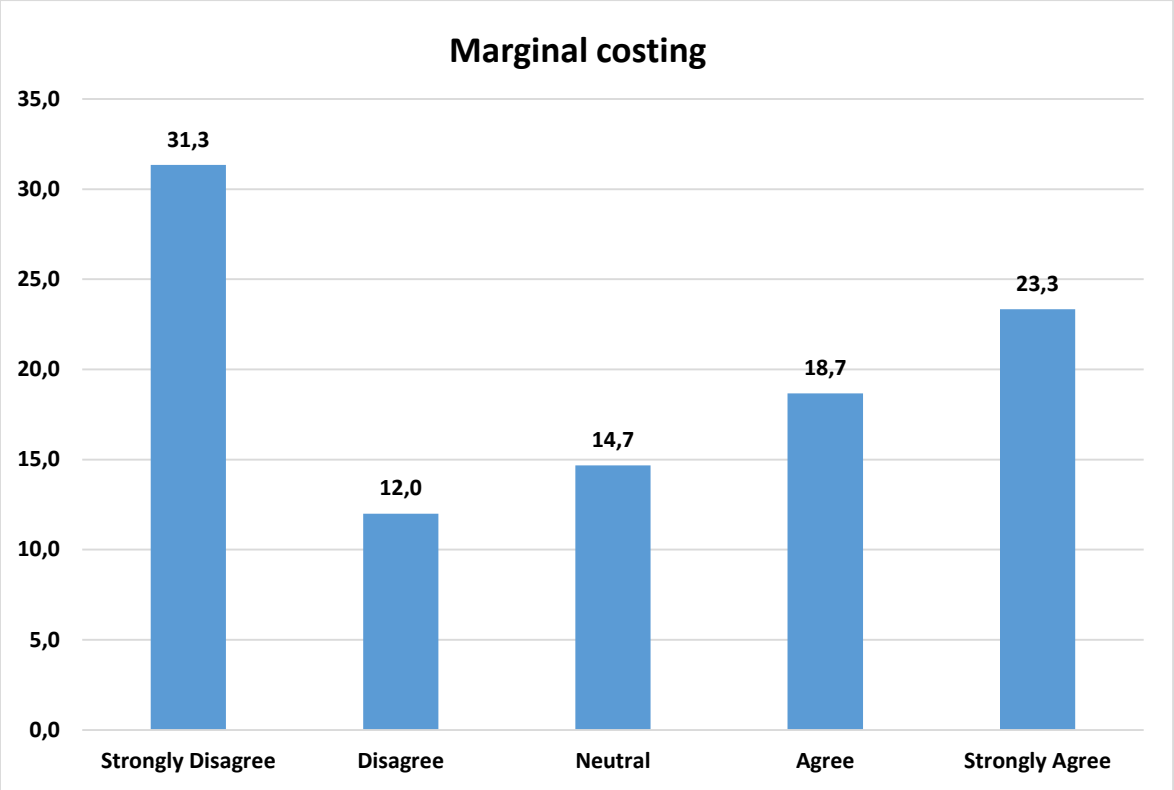
Figure 4.9: Standard costing



- **Marginal costing**

As depicted in Figure 4.10, less than a third (31.3%) of the respondents strongly disagreed that they adopted marginal costing in order to control expenditure, while 23.3% strongly agreed and 18.7% agreed that they did adopt marginal costing. 14.7% of the respondents remained neutral, and 12.0% disagreed. This means that 43.3% of the respondents did not support the adoption of marginal costing. These findings concur with those of Tabitha and Oluyinka (2016: 51) who also found that most manufacturing SMEs do not adopt marginal costing. Therefore, it can be concluded that the application for this particular tool is only moderately popular with SME manufacturers for meeting their specific cost control requirements.

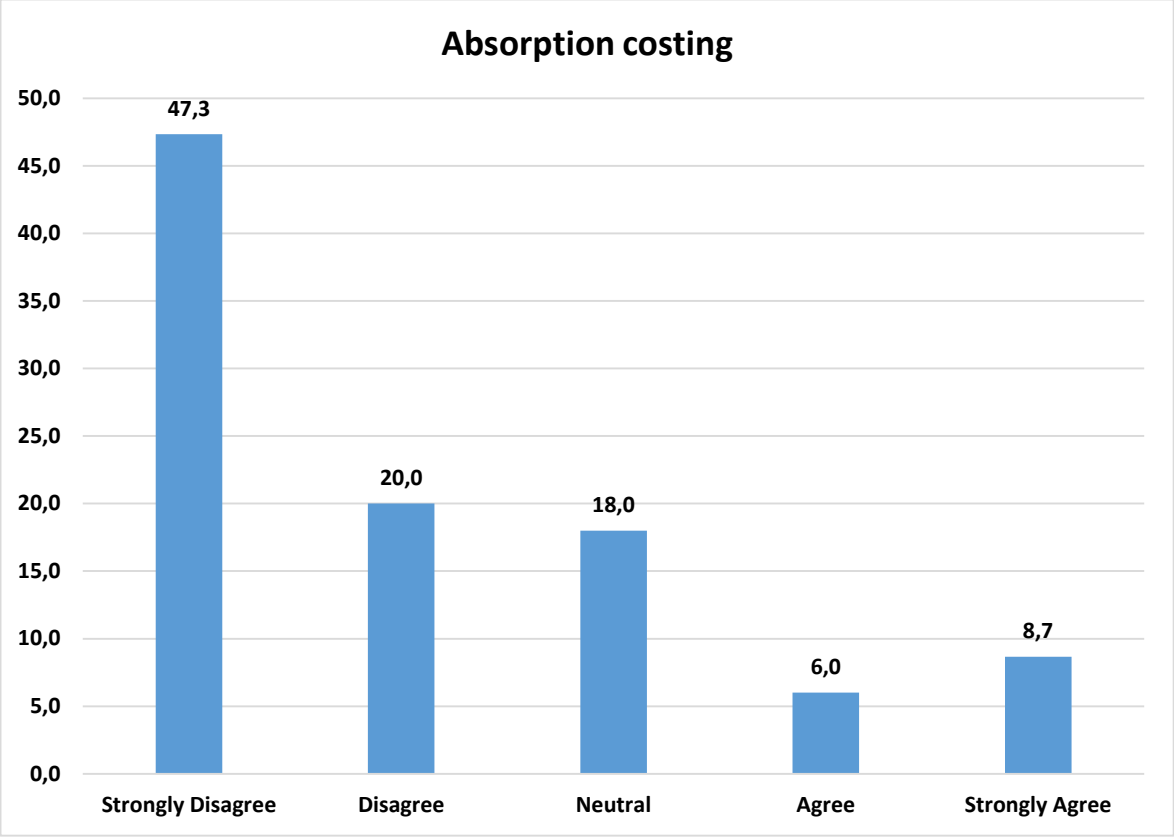
Figure 4.10: Marginal costing



- **Absorption costing**

Figure 4.11 shows that almost half (47.3%) and a further 20.0% of the respondents strongly disagreed and disagreed respectively, that absorption costing was adopted in their enterprises as a cost control system. However, close to one-fifth (18.0%) did not agree or disagree with the statement, while very few respondents (6.0%) agreed and 8.7% strongly agreed that they adopted absorption costing. Therefore, there was a low adoption rate of absorption costing and this tool is clearly not regarded as helpful for decision making amongst manufacturing SMEs. Moreover, these findings reflect those of Reynolds, Fourie and Erasmus (2018: 2) whose study also indicated that there was a low adoption rate of direct costing or absorption costing, since this technique does not consider the nature of the costs involved, and may lead to inconclusive or inaccurate product costing information being generated.

Figure 4.11: Absorption costing

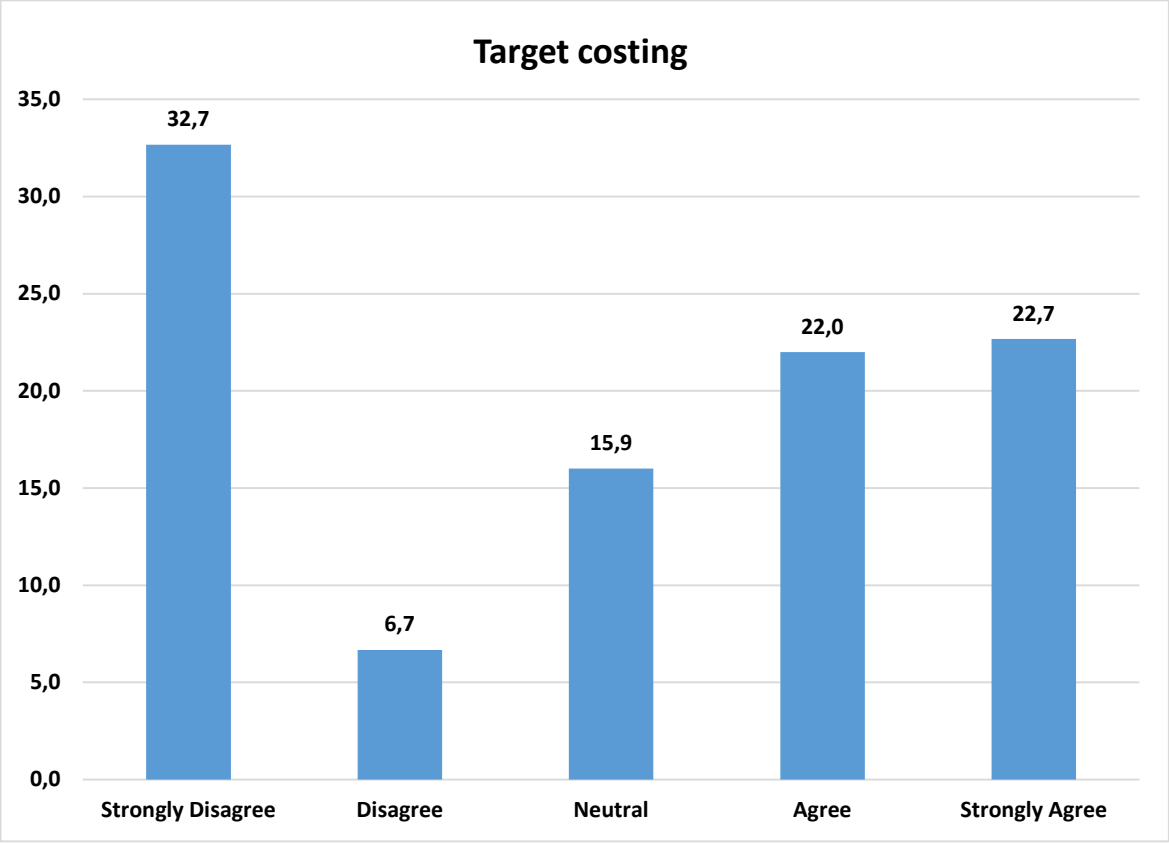


- **Target costing**

Figure 4.12 below indicates that close to a third of respondents (32.7%) strongly disagreed and a further 6.7% of the respondents disagreed that target costing was adopted in their enterprises. 22.7% and 22.0% of the respondents strongly agreed and agreed respectively that they did use target costing. 15.9% of the respondents remained neutral. These findings show that a larger proportion of the respondents (44.7%) compared to 39.4% adopted target costing as a strategic tool to manage and control expenditure. Amir *et al*. (2016: 86) show that target costing plays a key role in controlling business expenditure, consequently influencing the sustainable growth of an enterprise.

Not only does target costing allow manufacturing SMEs to exercise control over expenditure, but it is a strategic management accounting practise (SMAP) that provides managers with accurate and timeous information which is essential for decision making (Ojua 2016: 2).

Figure 4.12: Target costing

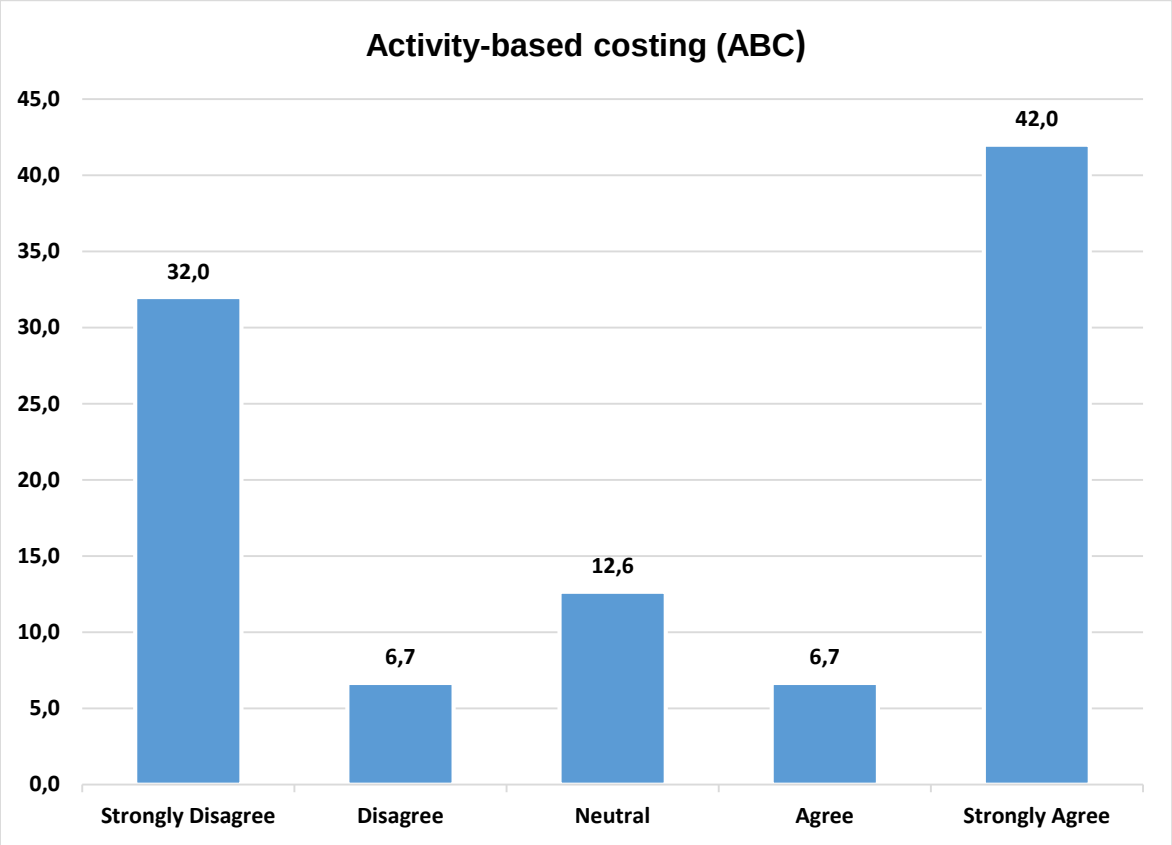


- **Activity-based costing (ABC)**

As indicated in Figure 4.13, less than half (42.0%) and less than a tenth (6.7%) of the respondents strongly agreed or agreed respectively that they adopted activity-based costing. On the other hand, close to a third (32.0%) of the respondents strongly disagreed and less than a tenth (6.7%) disagreed as to their adoption of ABC. These findings show that close to half (48.7%) of manufacturing SMEs in Durban were adopting ABC in their enterprises.

Ganorkar, Lakhe and Agrawal (2018: 87) found that most manufacturing firms adopt ABC in order to improve their competitive edge, to become more cost efficient and to boost their business performance. These findings indicate that many manufacturing SMEs in Durban understand the value of adopting ABC as it provides accurate costing estimates and detailed costing structures for the enterprise, maximising resource efficiently and determining the allocation of costs for each activity. With many SMEs in South Africa failing to sustain their operations, the adoption of ABC seems to be valuable tool for them to consider.

Figure 4.13: Activity-based costing (ABC)



4.5.1.2 Planning systems adopted to organise resources efficiently and effectively

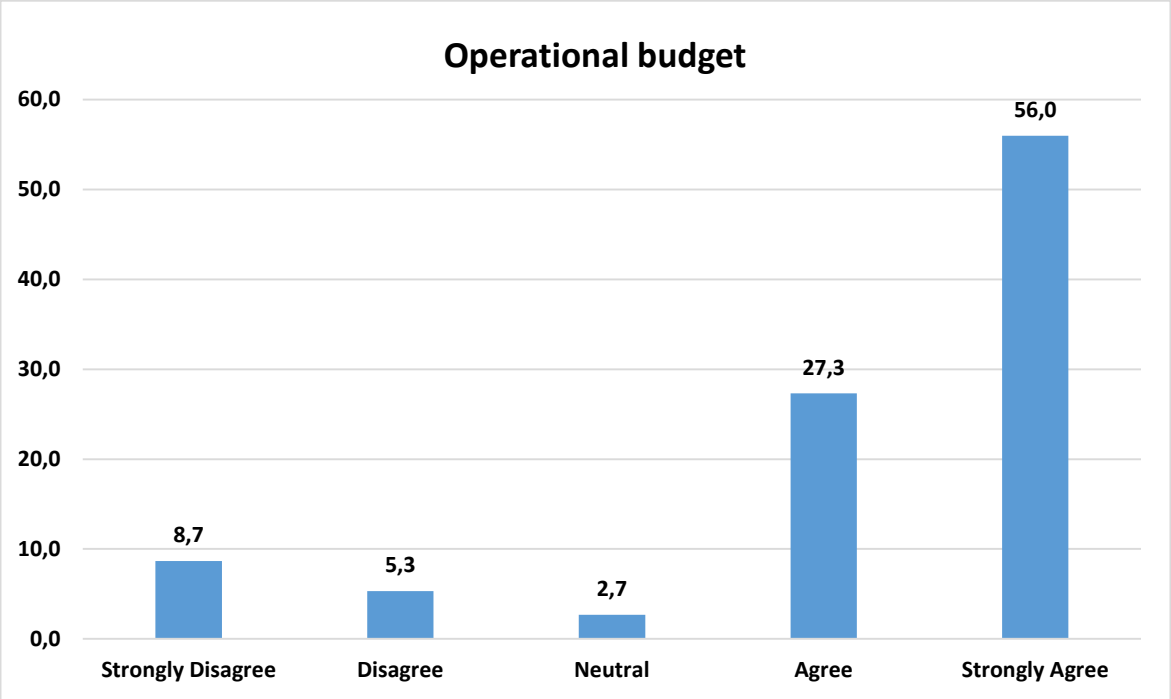
This section discusses findings that related to planning systems adopted to organise resources.

- **Operational budget**

Figure 4.14 shows that a significant number (56.0%) of the respondents strongly agreed that they adopted an operational budget to organise their business resources, and 27.3% agreed that an operations budget was adopted. 2.7% of the respondents were neutral and very few (5.3% and 8.7%) disagreed or strongly disagreed that they had adopted an operational budget.

Based on these findings, a significant number (83.3%) of manufacturing SMEs in the Durban area had adopted operational budgets. These results show that the majority of manufacturing SMEs adopt an operational budget to keep track of their resources. Zor, Lindernand and Endenich (2019: 660) found similar results. Poespowidjojo, Rani and Zakaria (2017: 577) argued that for SME managers to be able to sustain their business and improve their performance, they need to strategize, regulate and assess their operations in this way.

Figure 4.14: Operational budget

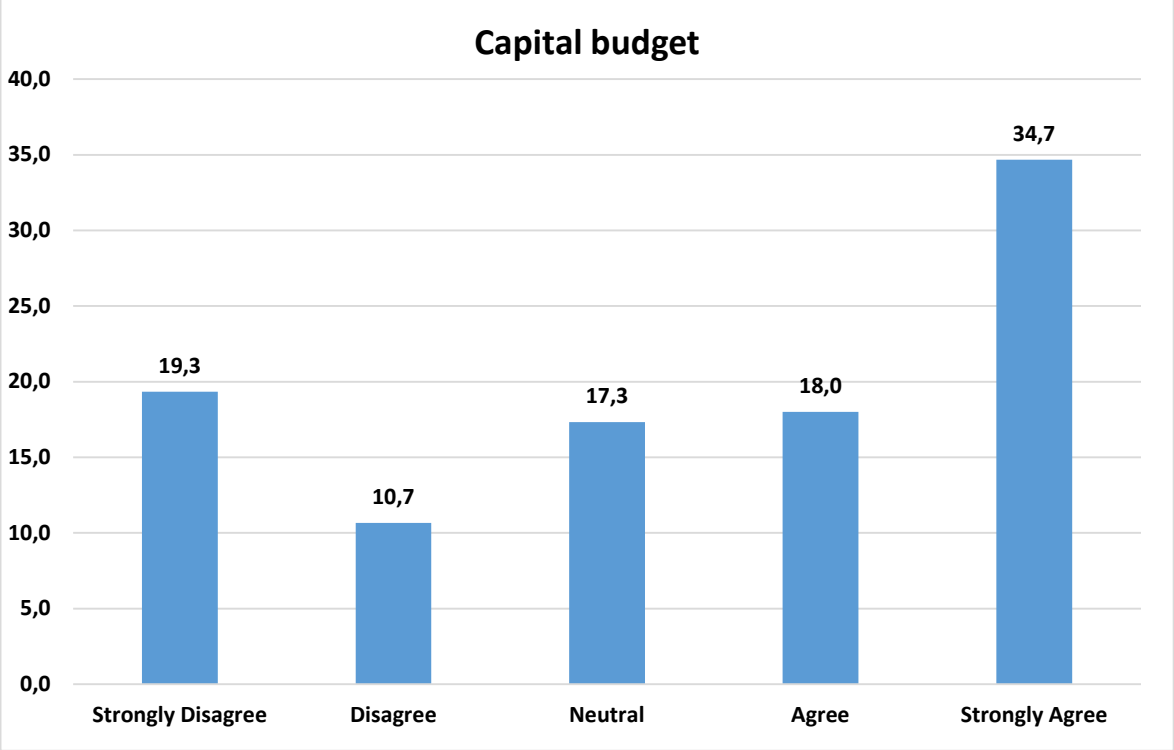


- **Capital budget**

Based on the findings reflected in Figure 4.15 below, over a third of the sample (34.7%) strongly agreed and a further 18.0% agreed that they employ capital budgeting. 17.3% gave no clear response, while close to one-fifth (19.3%) and over a tenth (10.7%) of the respondents strongly disagreed or disagreed that capital budgeting was adopted. These findings indicate that over half (52.7%) of the respondents adopted capital budgeting to organise their business resources by choosing the investments that they hope will generate higher returns. As noticed in the literature, access to finance or capital is an issue for most SMEs across the globe, making it important for manufacturing SMEs to consider their investing opportunities carefully.

Moreover, this study coincides with Samuelsson *et al.* (2016: 696) whose study emphasised the significance of long-term planning for manufacturing SMEs to implement sustainable strategies such as capital budgets that will support business growth.

Figure 4.15: Capital budget

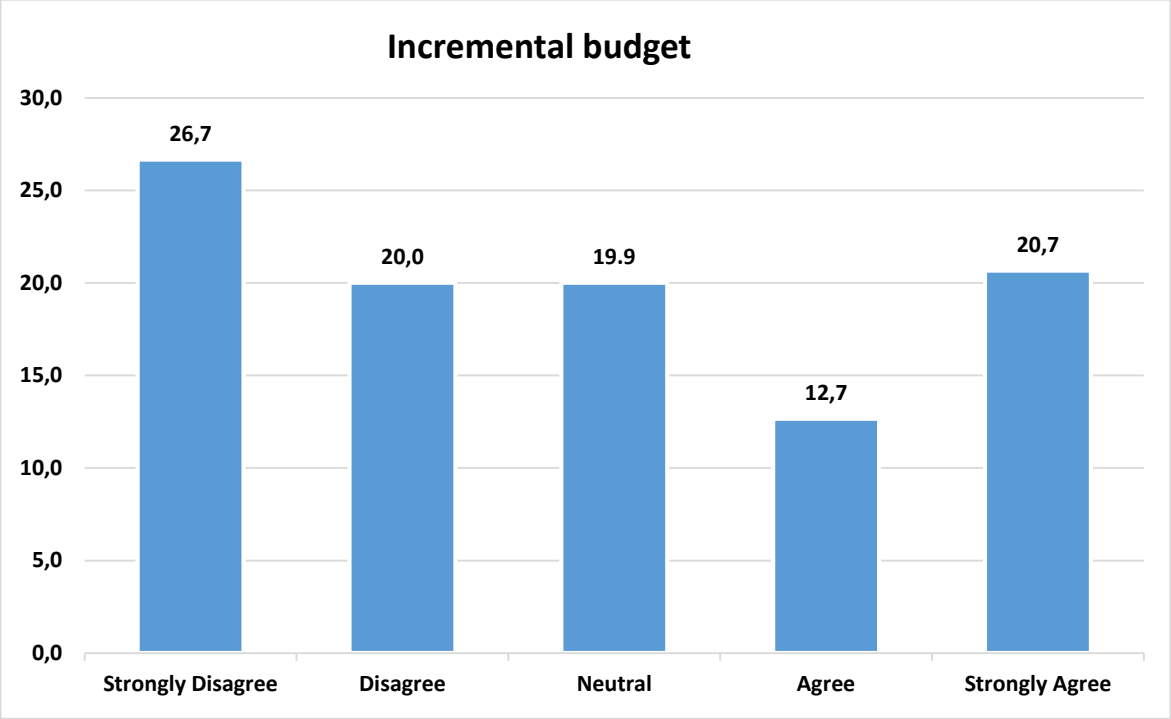


- **Incremental budget**

As depicted in Figure 4.16, 26.7% of respondents strongly disagreed that an incremental budget had been adopted in their enterprises while one fifth of the respondents (20.0%) disagreed. Close to a fifth of the respondents (19.9%) also remained neutral, while 12.7% and 20.7% of the respondents agreed and strongly agreed respectively with the statement.

These results show that slightly over a third of the respondents (33.4%) adopted incremental budgeting, while almost half (46.7%) did not support the adoption of this technique, although manufacturing SMEs do need to consider inflation and account for this in their budgets. These findings are at odds with those of Maduekwe and Kamala (2016: 190) who found that most SMEs in the Cape Metropolitan area had adopted incremental budgets. These findings also suggest that more manufacturing SMEs in the Durban area need to consider the adoption of an incremental budget

Figure 4.16: Incremental budget

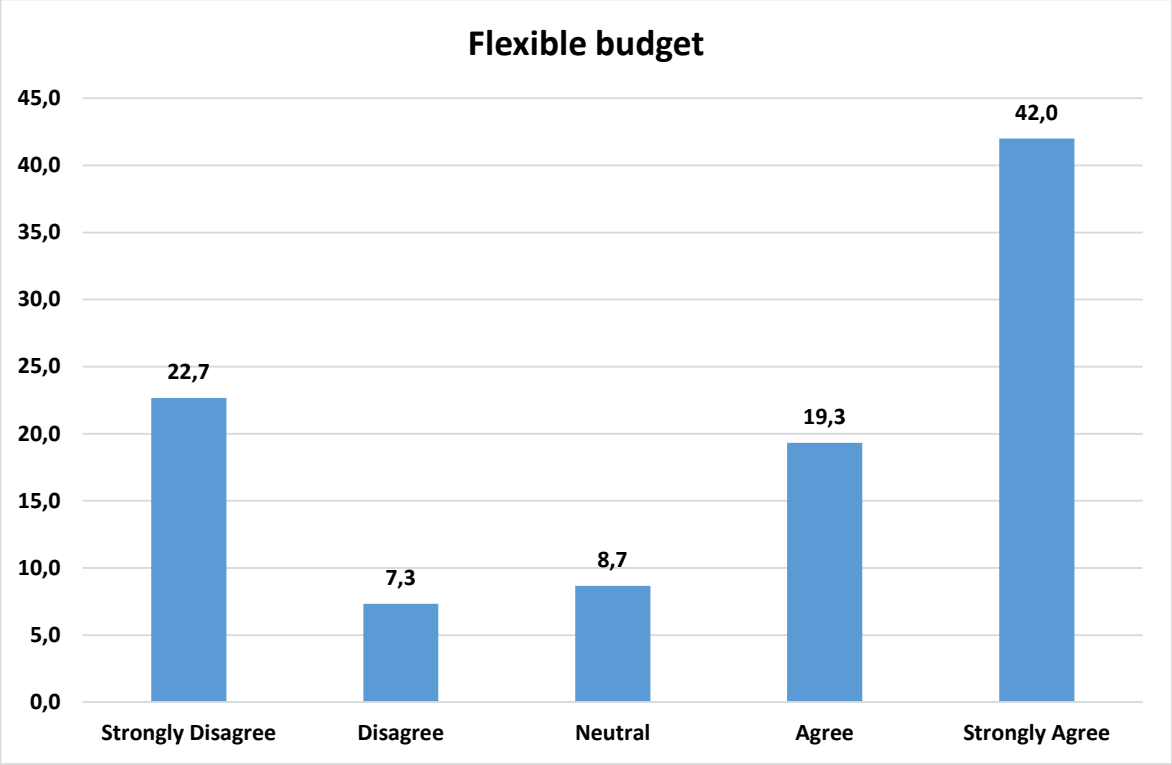


- **Flexible budget**

Based on the empirical findings represented by Figure 4.17 below, 42.0% and 19.3% of the respondents respectively either strongly agreed and agreed that the adoption of a flexible budget was incorporated into their businesses to organise their resources.

Conversely, 22.7% and 7.3% of the respondents either strongly disagreed or disagreed that they had adopted flexible budgets. This shows that 61.3% of manufacturing SMEs around the Durban area do adopt flexible budgets as a management tool allowing for adaptability to market conditions. These findings are comparable to those of Rozlan and Hashim (2018: 3) when researching flexible budgeting by SMEs in New Zealand.

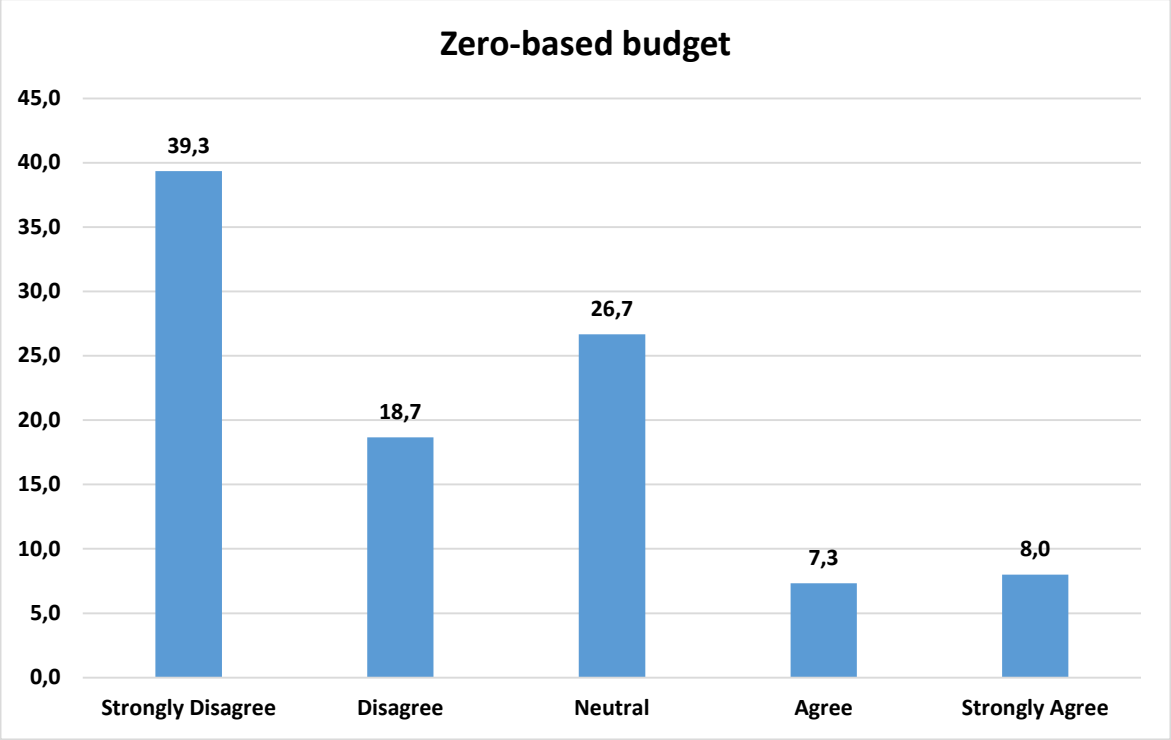
Figure 4.17: Flexible budget



- **Zero-based budget**

As depicted in Figure 4.18 below, 39.3% of the sample strongly disagree that zero-based budgets were adopted in their enterprises. Close to a fifth (18.7%) disagreed that they adopted zero-based budgets, with over a quarter (26.7%) remaining neutral towards the statement. Only 7.3% of the respondents agreed that a zero-based budget was adopted, and only 8.0% strongly agreed. Therefore, slightly over half of these manufacturing SMEs indicated that they did not adopt zero-based budgeting. These results are disquieting as this type of budget is known to assist managers in identifying cost effective methods that lead to improvements in a business's operating activities. It was also concerning that over a quarter of the respondents remained neutral, indicating that they were not sure if ZBB was used. It is therefore probable that many SME owners/mangers or other decision makers do not possess the necessary skills required to draw up this type of budget.

Figure 4.18: Zero-based budget



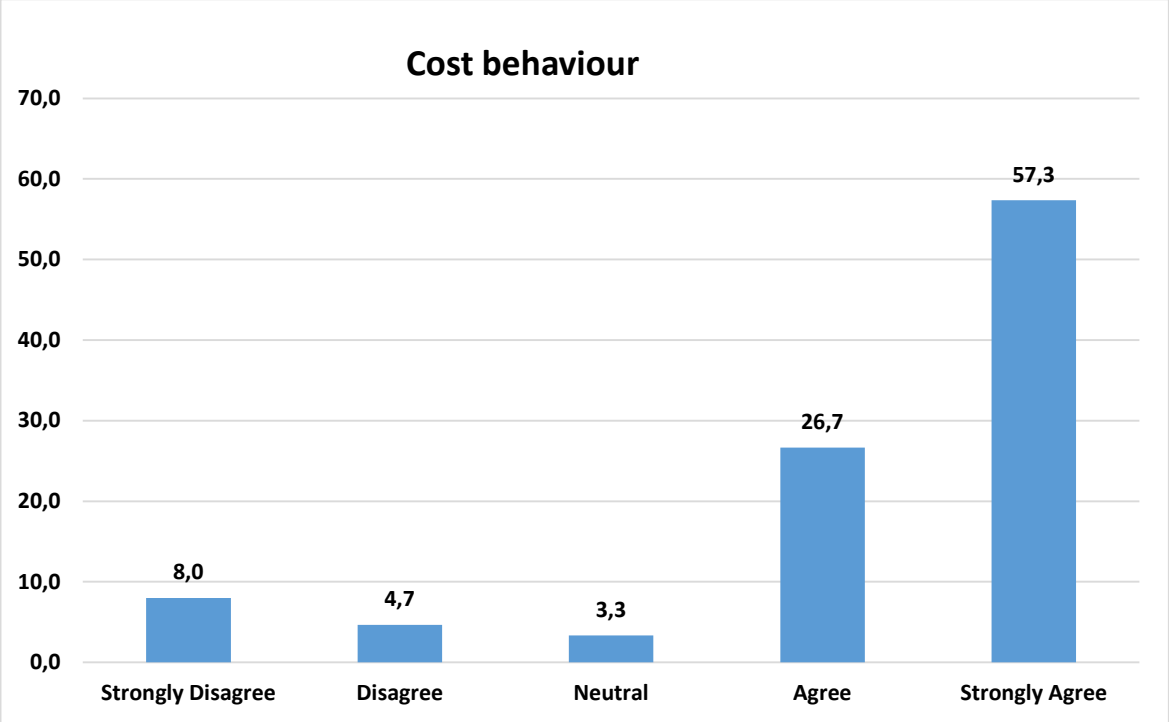
4.5.1.3 Decision support systems adopted to optimise resource allocations

This section discusses findings that relate to decision support systems adopted to optimise resource allocations.

- **Cost behaviour**

Figure 4.19 reflects that over half (57.3%) of the respondents strongly agreed that cost behaviour was adopted as a decision making tool. This was further supported by over a quarter (26.7%) of the respondents who agreed with the statement. Thus only very few respondents (8.0% and 4.7% respectively) strongly disagreed or disagreed that cost behaviour was adopted. Only 3.3% remained neutral. These results show that a large majority of manufacturing SMEs around the Durban area (84.0%) do adopt cost behaviour as a decision support tool. These results also indicate that manufacturing SME owners do appreciate the value of having effective cost control measures to insure efficient allocation of resources.

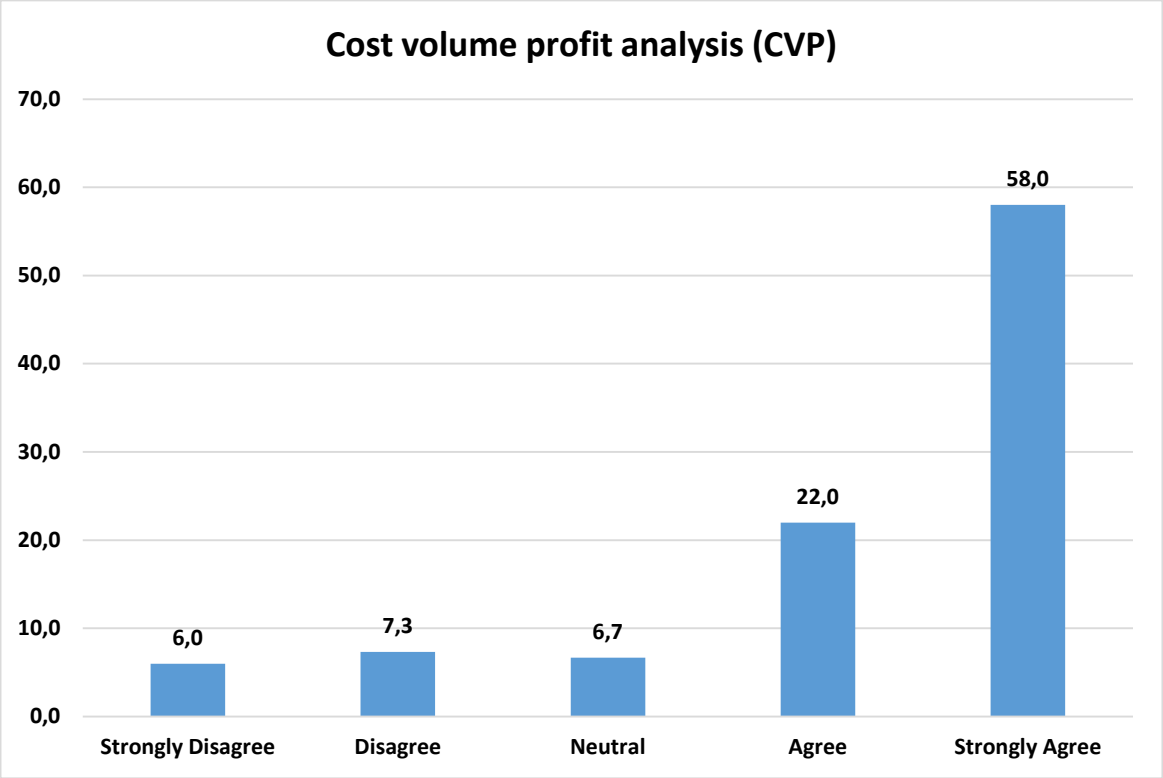
Figure 4.19: Cost behaviour



- **Cost volume profit analysis**

Figure 4.20 reflects that over a half (58.0%) of the respondents strongly agreed and close to a quarter (22.0%) agreed that cost volume profit analysis is implemented in their businesses. 6.7% of the respondents were unclear and remained neutral. A small proportion (6.0% and 7.3% respectively) either strongly disagreed or disagreed. These findings show that a large proportion (80.0%) of respondents understand the adoption of CVP to be an important decision making support tool.

Figure 4.20: Cost volume profit analysis

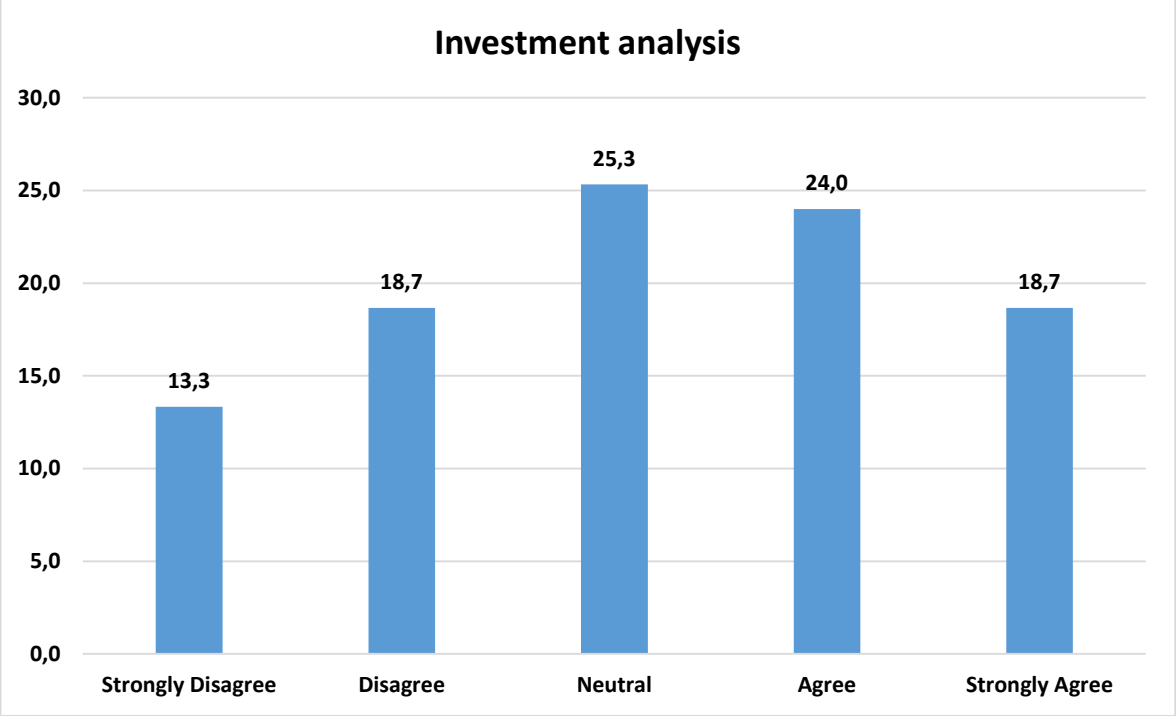


- **Investment analysis**

Figure 4.21 shows that a concerning number of the respondents (25.3%) were not adopting investment analysis as a decision making tool to optimise resource allocation. This could indicate that the respondents do not possess the necessary knowledge to implement this technique.

Nearly a quarter agreed that they did adopt investment analysis however, and this was supported by 18.7% who also strongly agreed with the statement. 18.7% of the respondents disagreed and 13.3% strongly disagreed. Based on the evidence, therefore, fewer than half of manufacturing SMEs (42.7%) in the Durban area adopt investment analysis as a decision support tool. These results show that investment analysis is not strongly supported for allocating resources compared to CVP.

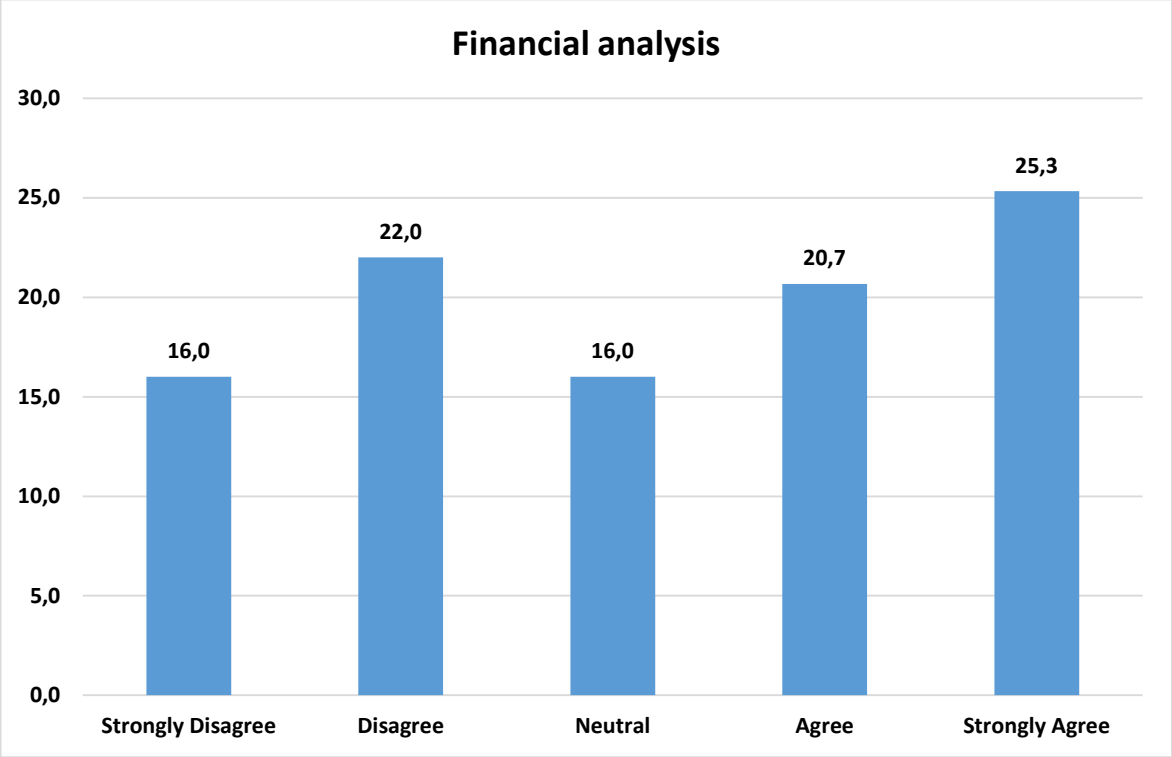
Figure 4.21: Investment analysis



- **Financial analysis**

Figure 4.22 shows whether financial analysis was adopted by the respondents in order to optimise resource allocation. Based on the findings, 16.0% and 22.0% of the respondents strongly disagreed and disagree respectively while 16.0% remained neutral. 20.7% agreed and 25.3% strongly agreed. It is evident, therefore, that almost half of the respondents (45.3%) do use financial analysis, allowing them to assess their business performance based on the allocated resources. These findings are in accordance with those of with Angilella and Mazzù (2015: 543).

Figure 4.22: Financial analysis



4.5.1.4 Pricing policy adopted to improve enterprise's performance

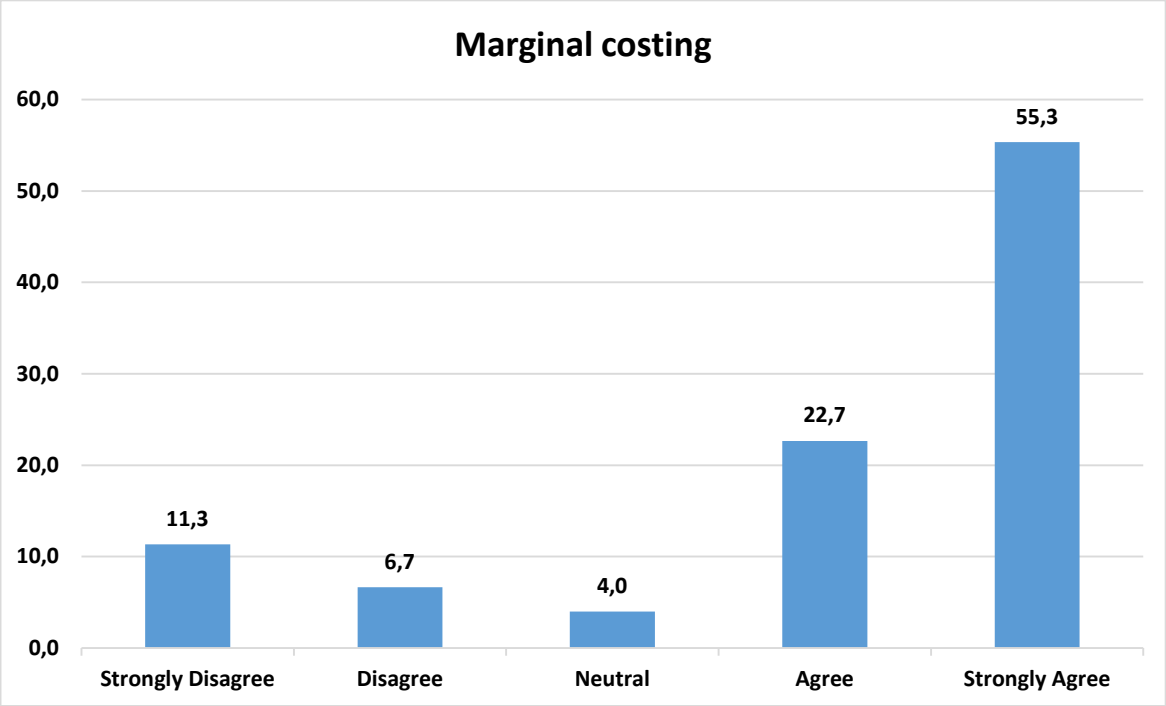
This section discusses findings that relate to pricing policy adopted to improve an enterprise's performance.

- **Marginal costing**

As indicated in Figure 4.23 below, more than half (55.3%) of the respondents strongly agreed that marginal costing was adopted in their enterprises as a pricing tool while an additional 22.7% agreed, and 4.0% remained neutral. Very few of the respondents (6.7% and 11.3%) disagreed or strongly disagreed that marginal costing was adopted. The findings therefore demonstrate that a significant number (78.0%) of manufacturing SMEs in Durban do adopt marginal costing to improve their business performance and are thus creating a better chance of sustaining their businesses.

These findings support Tabitha and Oluyinka (2016: 49) who also found that marginal costing was a commonly adopted pricing tool amongst manufacturing SMEs.

Figure 4.23: Marginal costing

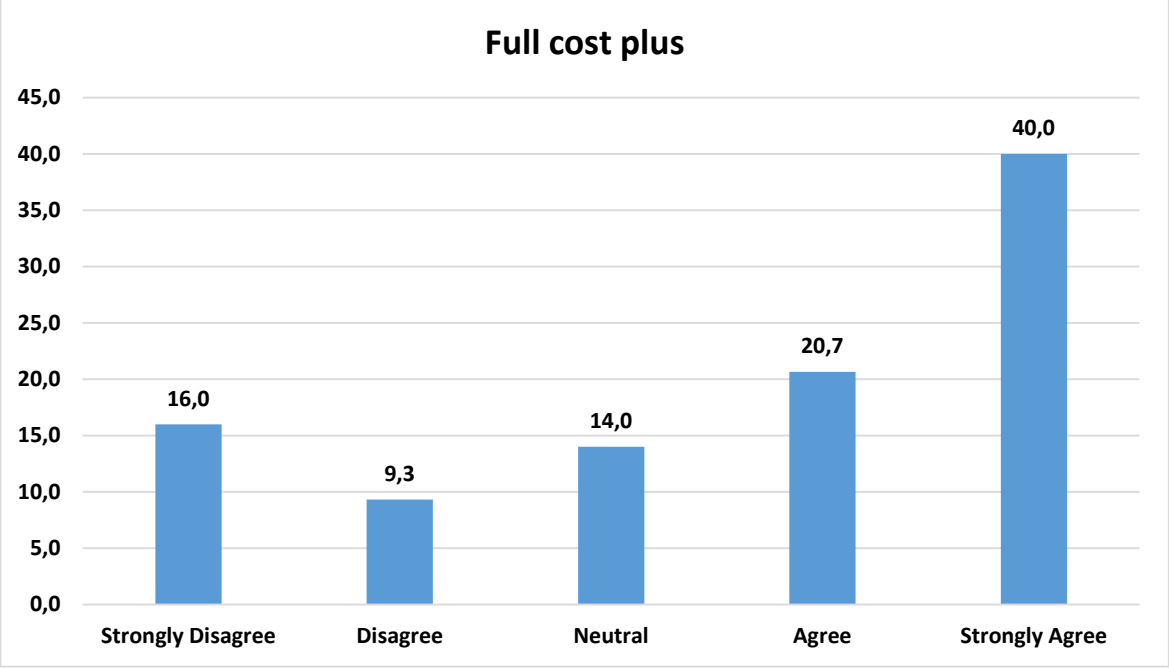


- **Full cost plus**

Figure 4.24 intended to find out whether 'full cost plus' pricing was adopted by manufacturing SMEs. Based on the results below, 16.0% and less than ten percent (9.3%) of the respondents strongly disagree and disagree respectively that they adopted full cost plus pricing to improve their firms' profitability. 14.0% of the respondents were neutral, while 40.0% and 20.7% respectively of the respondents either strongly agreed or agreed that they adopted full cost pricing to improve their enterprises performance. Based on these results, it was evident that over half (60.7%) of the respondents used this type of pricing strategy to improve their business performance by accounting for all types of cost involved in their production processes.

This method is also known for complying with Generally Accepted Accounting Principles (GAAP) reporting standards, which enable entities to achieve full disclosure in their financial statements. However, the findings of this study contradict those of Hyginus, Wabuji and Christian (2019: 58) who concluded that full cost plus pricing has no influence on business performance.

Figure 4.24: Full cost plus

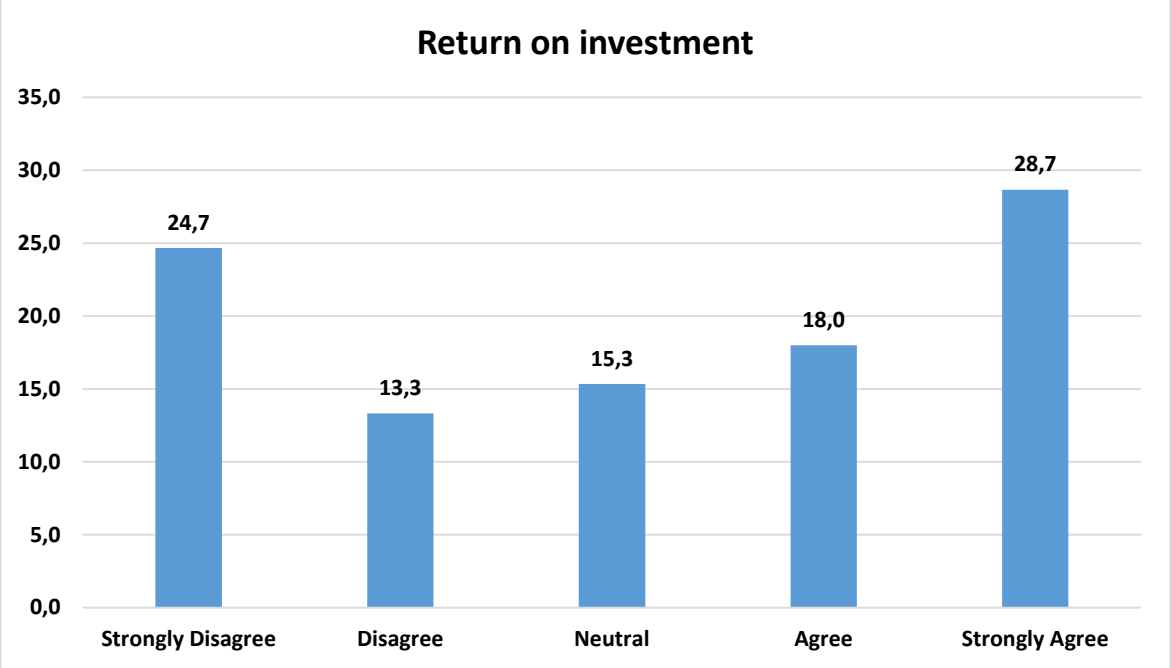


- **Return on investment**

Figure 4.25 below was used to determine whether return on investment was adopted by manufacturing SMEs around the Durban area. Nearly a quarter (24.7%) of the respondents strongly disagree that return on investment was adopted while 13.3% of the respondents disagreed, and a further 15.3% of the respondents remained neutral. More than a quarter (28.7%) and a further 18.0% of the respondents strongly agreed and agreed respectively that return on investment was a pricing tool that they adopted to improve their enterprise's performance. These results reflect that nearly half (46.7%) of the respondents adopted a return on investment pricing strategy in their enterprises to assess and project their investment opportunities.

These findings are similar to those of Ho *et al.* (2016: 53) whose study found that most Malaysian manufacturing SMEs adopt return on investment in their enterprises in order to enhance their business performance and gain a competitive edge in the market.

Figure 4.25: Return on investment



4.5.1.5 Management reporting systems adopted for strategies

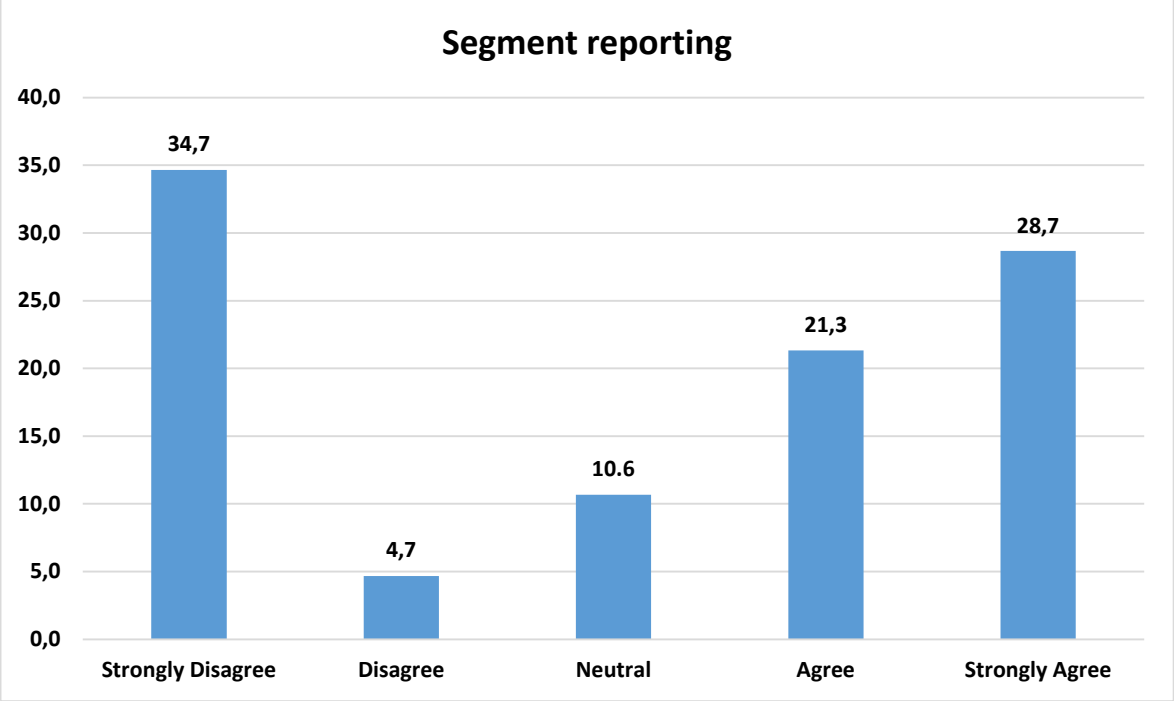
This section discusses findings that related to management reporting systems adopted for strategizing.

- **Segment reporting**

Figure 4.26 indicates whether segment reporting was adopted by manufacturing SMEs in Durban for formulating and executing business strategies. Over a quarter (28.7%) and 21.3% of the respondents either strongly agreed or agreed that segment reporting was adopted in their enterprises for strategic purposes. While a small number (10.6%) of the respondents were neutral and over a third (34.7%) strongly disagreed that segment reporting was adopted.

Only 4.7% of the respondents disagreed with the statement. Based on the findings therefore, half (50.0%) of the respondents indicated that they adopted segment reporting for formulating and executing business strategies. These findings show that many manufacturing SMEs in the Durban area do implement segment reporting in their enterprises.

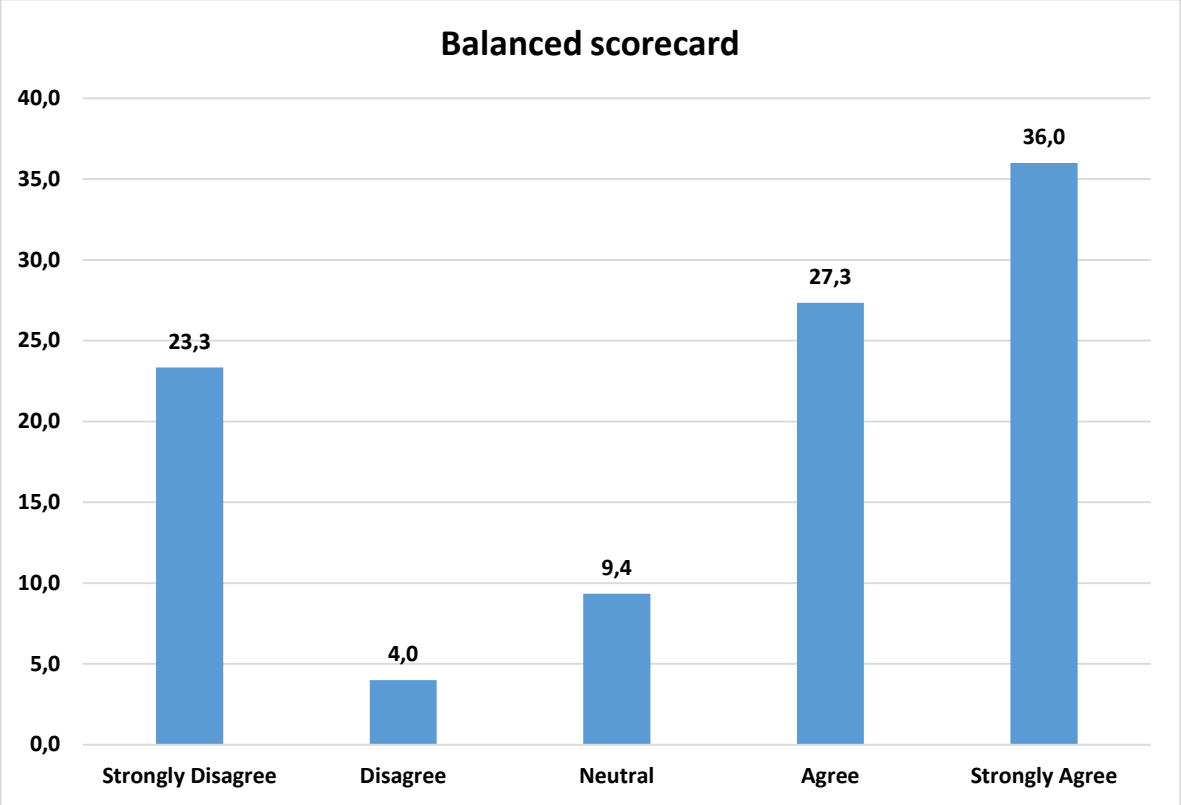
Figure 4.26: Segment reporting



- **Balanced scorecard**

The findings in Figure 4.27 below indicate whether a 'balanced scorecard' was adopted by manufacturing SMEs in Durban. 27.3% and 36.0% of the respondents agreed or strongly agreed that they adopted a balanced scorecard. 9.4% remained neutral, while only 4.0% of the respondents disagreed and close to a quarter (23.3%) strongly disagreed that they adopted a 'balanced scorecard'. Thus the majority (63.3%) of the respondents did adopt a balanced scorecard for strategic purposes including communication, planning and aligning business objectives.

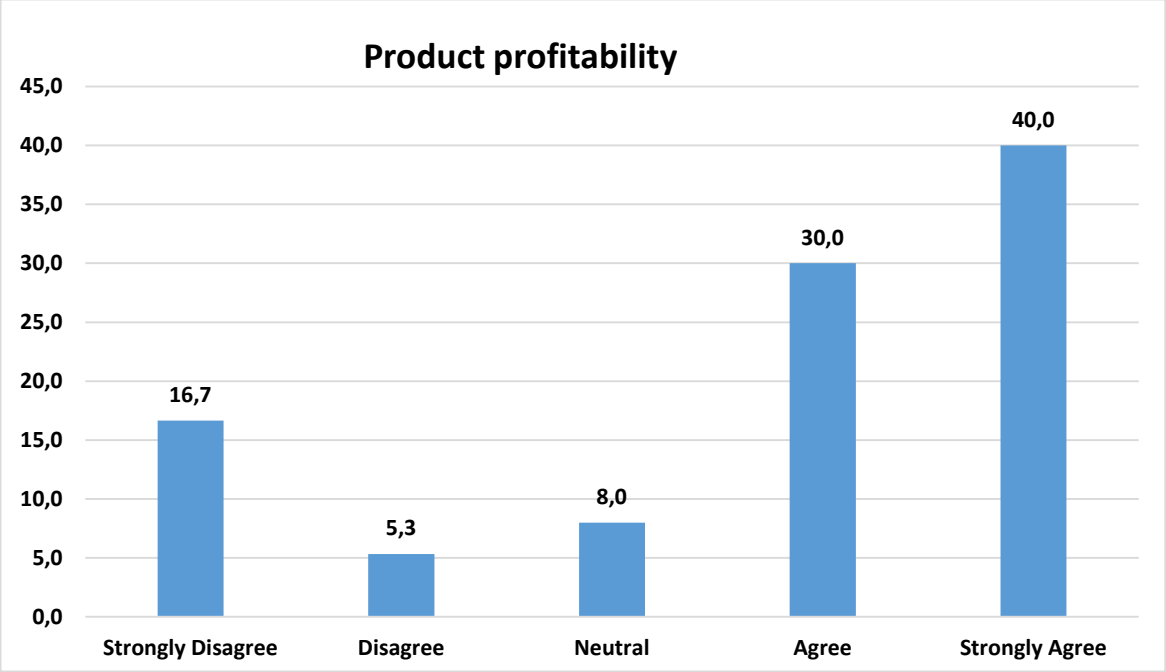
Figure 4.27: Balanced scorecard



- **Product profitability**

Figure 4.28 reflects whether product profitability was adopted. A significant number (40.0% and 30.0% respectively) of the respondents either strongly agreed or agreed that they adopted product profitability to formulate and execute business strategies. 8.0% were neutral and only 16.7% and 5.3% strongly disagreed and disagreed respectively. Therefore, it is evident that a clear majority (70.0%) of manufacturing SMEs in Durban do use product profitability for developing and sustaining their business strategies.

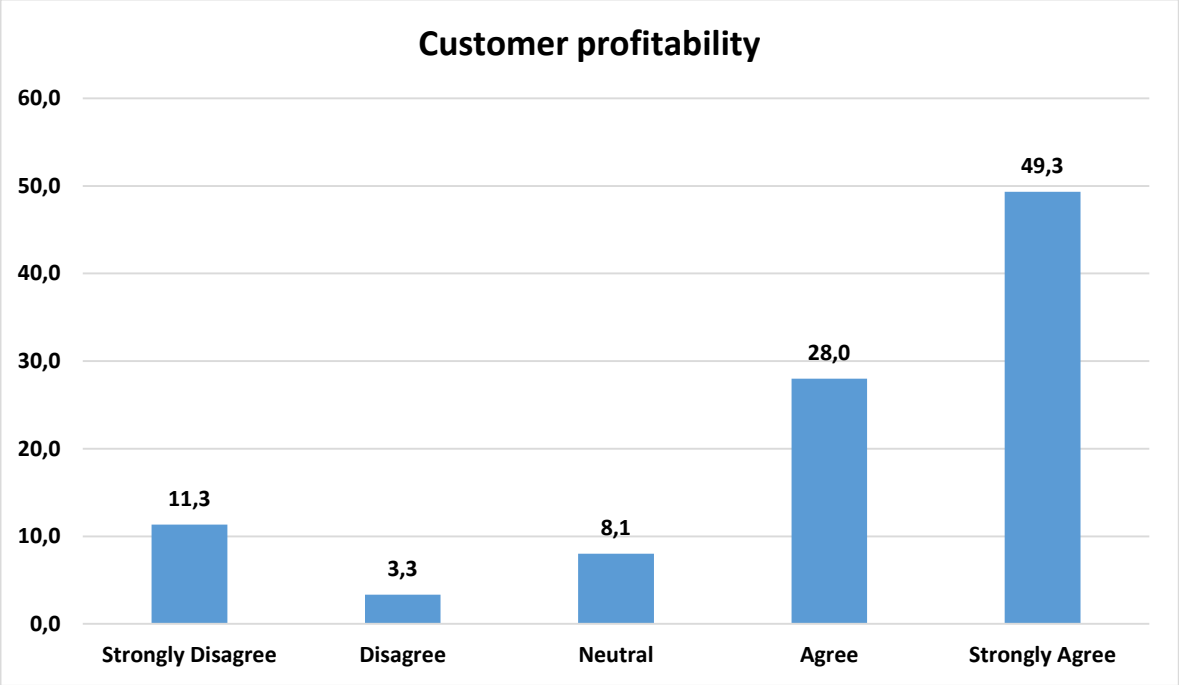
Figure 4.28: Product profitability



- **Customer profitability**

Figure 4.29 below indicates whether customer profitability was adopted by manufacturing SMEs in Durban as an element of their business strategies. More than a quarter (28.0%) and almost another half (49.3%) of the respondents agreed and strongly agreed respectively, that customer profitability was adopted. 8.1% were neutral while very few (3.3% and 11.3%) of the respondents disagreed or strongly disagreed that they adopted customer profitability as a strategy. Based on these empirical findings, it can be seen that a large majority (77.3%) of the respondents took customer profitability into account. This ensures that they focus on their customers by increasing their production or introducing innovative products where needed. To ensure sustainability and growth, they need to consider their customers' wants and needs by producing and selling the right products to the right customers. Based on Figures 4.28 and 4.29, a significant relationship between product and customer profitability indicates that the respondents are adopting these strategies successfully to meet their business objectives.

Figure 4.29: Customer profitability



4.5.1.6 Conclusion of objective 1

The overall findings provided above were summarised in line with Objective 1. The results gathered from these findings indicate that there remains a great need for manufacturing SMEs in the Durban area to adopt MAPs in order to sustain their business operations and to gain more of a competitive edge. Overall it was found that nearly half (49.0%) of the respondents were adopting ABC as a control system for expenditure. In addition, a large majority (83.0%) of the respondents support the adoption of an operational budget compared to the other budgeting techniques that are used in allocating scarce resources. Again, a very significant number of respondents (84.0%) indicated that cost behaviour was adopted as a decision support tool in optimising the allocation of resources. As far as pricing decisions went, it was evident that marginal costing took precedence over other pricing strategies as again a large majority (78.0%) of the respondents supported its adoption. Lastly, customer profitability was the preferred management reporting system adopted amongst manufacturing SMEs in Durban.

4.5.2 Objective 2: Environmental factors that affect the adoption of MAPs by manufacturing SMEs with specific reference to Durban

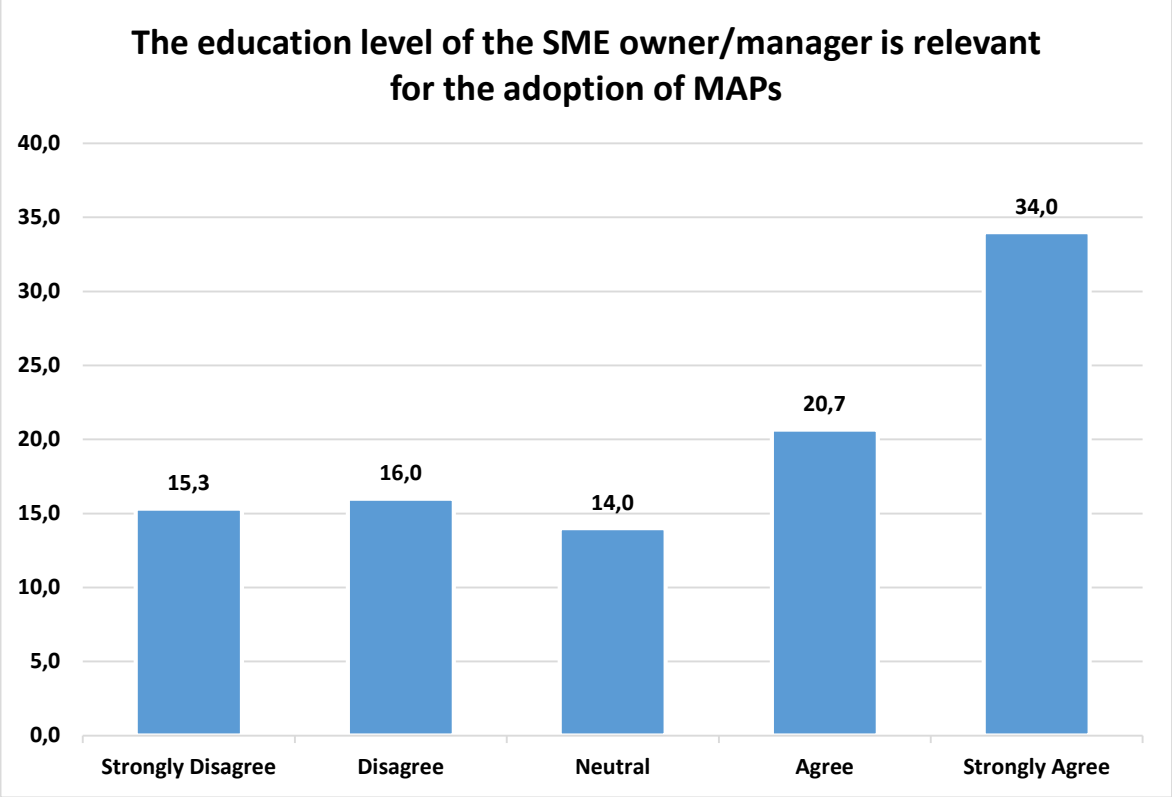
Section C of the questionnaire was designed to address this objective which was to examine environmental factors affecting the adoption of MAPs. As discussed in the literature review, the internal factors that influence the adoption of MAPs focused on owners'/managers'/other decision making stakeholders' level of education, experience, training, age, and on company size and structure. The external factors considered were the environment, government and supporting agencies, political and social changes, networking with others, use of technology, MAs and APs, competition, market success and market innovation. The findings gathered from the respondents are discussed below:

4.5.2.1 The educational level of the SME's owner/manager/staff is relevant for the adoption of MAPs

Figure 4.30 indicates whether the educational level of the SME owner/manager/other decision making stakeholder, is relevant for the adoption of MAPs. Based on the findings, 34.0% of the respondents and a further 20.7% strongly agreed and agreed respectively, that educational levels play an important role in the adoption of MAPs. Only a few respondents, 15.3% and 16.0%, strongly disagreed or disagreed with the statement, reflecting that they did not view the level of education as important. Another 14.0% of the respondents were neutral. These findings are supported by a Chi-square test that was conducted to determine whether education level of SME owner/manager/other decision making stakeholder was considered to be significant for the adoption of MAPs. The results show that (X^2 = 20.267; df = 4; P = 0,000) for this variable, indicating that education level *is* relevant for the adoption of MAPs. These findings clearly show that owners/managers/other decision making stakeholders of manufacturing SMEs in Durban considered the level of education as influential in adopting relevant MAPs.

However, the findings of this study contradict those of Omsa *et al.* (2018: 80) whose study found that education level did *not* have any significance in adopting strategic MAPs for Indonesian medium sized enterprises. However, the results of the present study agree with Jevwegaga *et al.* (2018: 6) who found that Nigerian SME managers believed that the education level of SME owners/managers/other decision making stakeholders has a significant influence on business performance and both Amoako (2013: 73) and Maziriri and Mapuranga (2017: 16) agree that the owner or manager needs to possess some level of education in order to handle business performance, thus enabling development and sustainable growth.

Figure 4.30: Education level of the SME owner/manager/staff is relevant for the adoption of MAPs

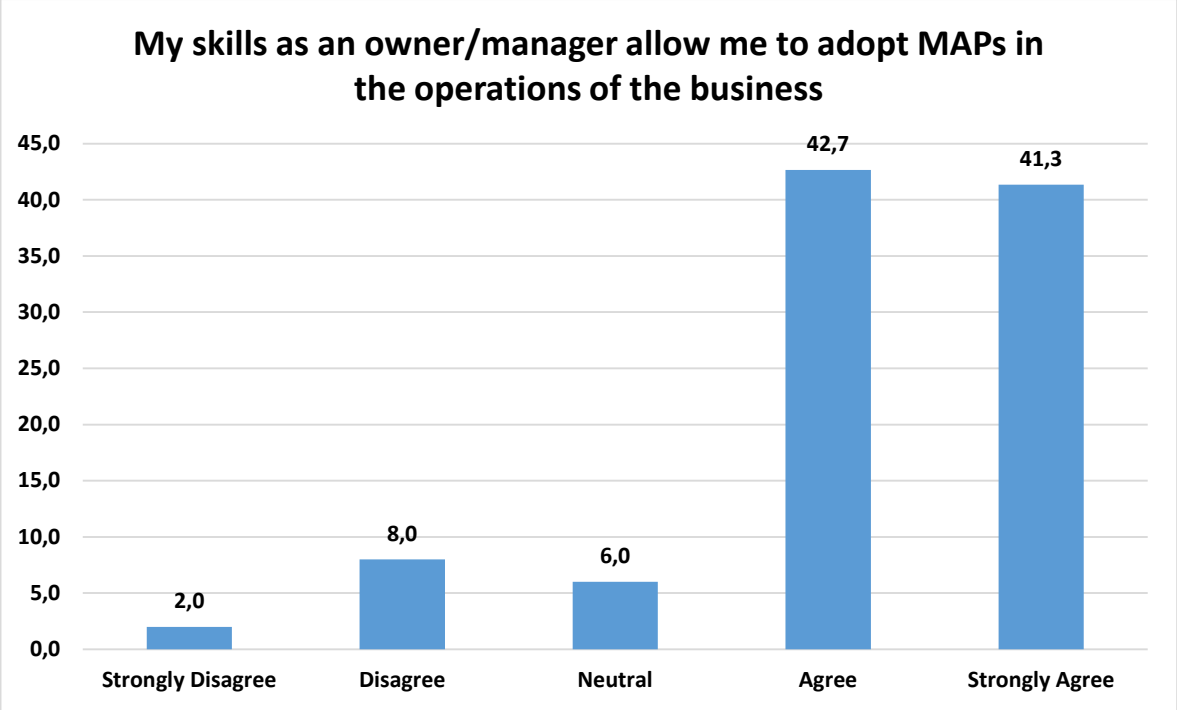


4.5.2.2 My skills as an owner/manager allow me to adopt MAPs in the operations of the business

Figure 4.31 below reflects whether the respondents believed that the skills of owners/managers allowed them to adopt MAPs in the operations of the business. A significant number of the respondents agreed that they did, with 42.7% and 41.3% agreeing and strongly agreeing respectively, indicating that owners'/managers' skills were considered significant in the adoption of relevant MAPs. A few (6.0%) were neutral, while only 8.0% and 2.0% disagreed and strongly disagreed respectively with the statement indicating that the adoption of MAPs within manufacturing SMEs was not linked to owner/managers skills in their opinion. These findings indicated a clear understanding that the adoption of MAPs by manufacturing SMEs is strongly supported by the level of skills possessed by the owner/managers.

This was also the conclusion reached by Rickards and Ritsert (2018: 28). Again, these findings are supported by a Chi-square test that was conducted to determine whether skills of owners/managers allowed them to adopt MAPs. The results show that (X^2 = 122.467; df = 4; P = 0,000) for this variable, indicating that the respondents agreed that owner/managers skills influence their ability to adopt appropriate MAPs for supporting the operations of the business. These findings indicated a clear agreement that the adoption of MAPs by manufacturing SMEs is largely determined by the level of skills possessed by their owner/managers.

Figure 4.31: My skills as an owner/manager allow me to adopt MAPs in the operations of the business

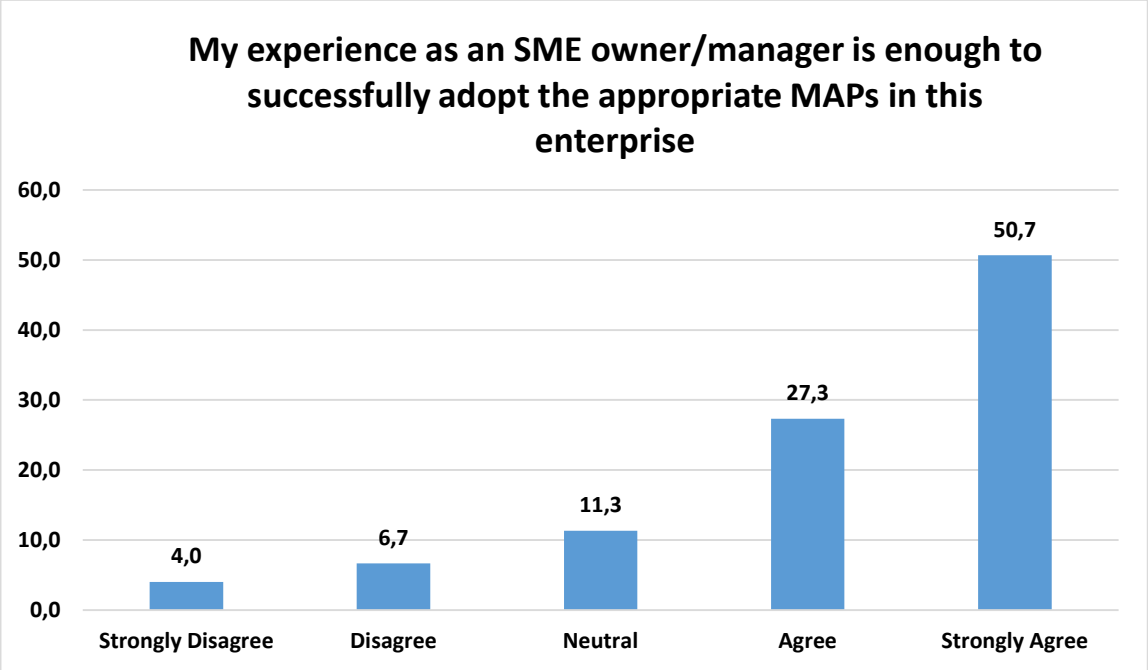


4.5.2.3 My experience as an SME owner/manager is enough to successfully adopt the appropriate MAPs in this enterprise

Figure 4.32 reflects whether SME owner/managers' experience was considered enough to successfully adopt the appropriate MAPs. Slightly above half (50.7%) of the respondents strongly agreed, and a further 27.3% agreed, that their experience was enough to successfully adopt the appropriate MAPs. A few respondents (11.3%) were neutral, while only 6.7% and 4.0% disagreed and strongly disagreed respectively with the statement. Based on the findings, the great majority (78%) of the respondents viewed their experience as adequate to successfully adopt appropriate MAPs that would help the enterprise to be sustainable. These findings are supported by a Chi-square test that was conducted to determine whether SME owner/manager's experience was considered enough to successfully adopt the appropriate MAPs.

The results show that (X^2 = 112,733; df = 4; P = 0,000) for this variable indicating that SME owner/managers are in agreement that professional experience in the manufacturing sector is key to successfully adopting the appropriate MAPs in the enterprise.

Figure 4.32: My experience as an SME owner/manager is enough to successfully adopt the appropriate MAPs in this enterprise

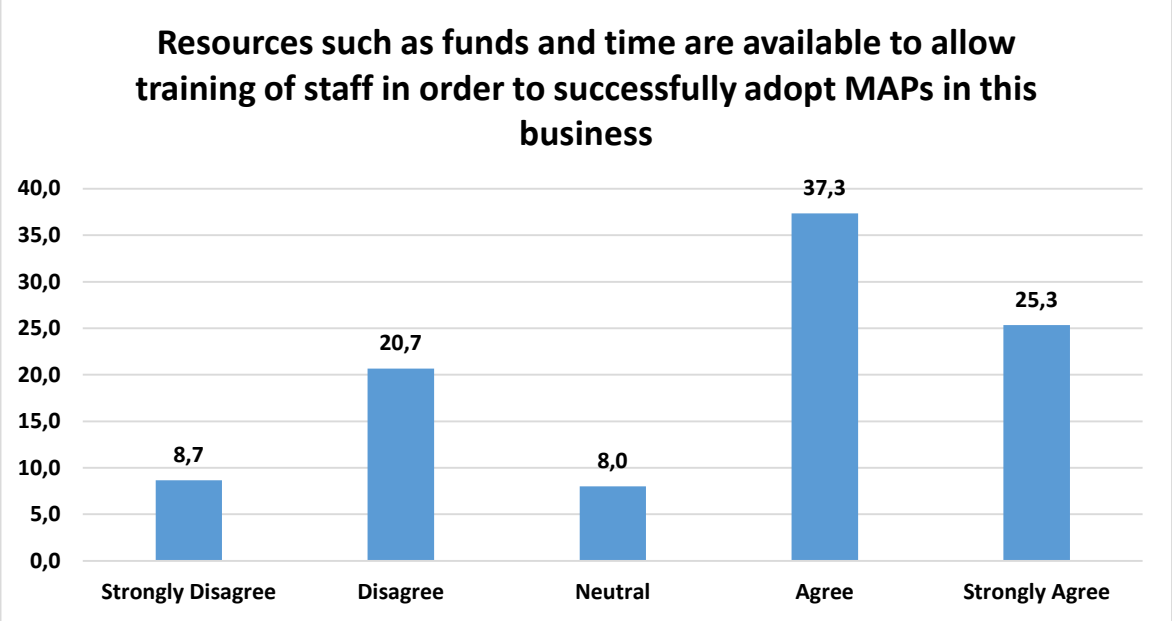


4.5.2.4 Resources such as funds and time are available to allow training of staff in order to successfully adapt to MAPs in this business

Figure 4.33 reflects whether resources such as funds and time are available to allow training of staff in order to successfully adopt MAPs in the business. Over a third of the respondents (37.3%) agreed and slightly over a quarter (25.3%) strongly agreed, that resources such as funds and time, were available to allow training of staff to successfully adopt MAPs in the business. However, a noticeable number of the respondents, 20.7% and 8.7% disagreed and strongly disagreed respectively, while another 8.0% of respondents were neutral.

Even though the majority of the respondents (62.6%) indicated that they have resources to facilitate training and to capacitate their employees to manage the adoption of relevant MAPs, several respondents (37.4%) were in disagreement. These finding are supported by a Chi-square test that was conducted to determine whether resources such as funds and time are thought to be available to allow training of staff in order to successfully adopt MAPs in the business. The results show that (X^2 = 45.133; df = 4; P = 0,000) for this variable, indicating that resources such as funds and time are available to allow training of staff in order to adopt MAPs.

Figure 4.33: Resources such as funds and time are available to allow training of staff in order to successfully adopt to MAPs in this business

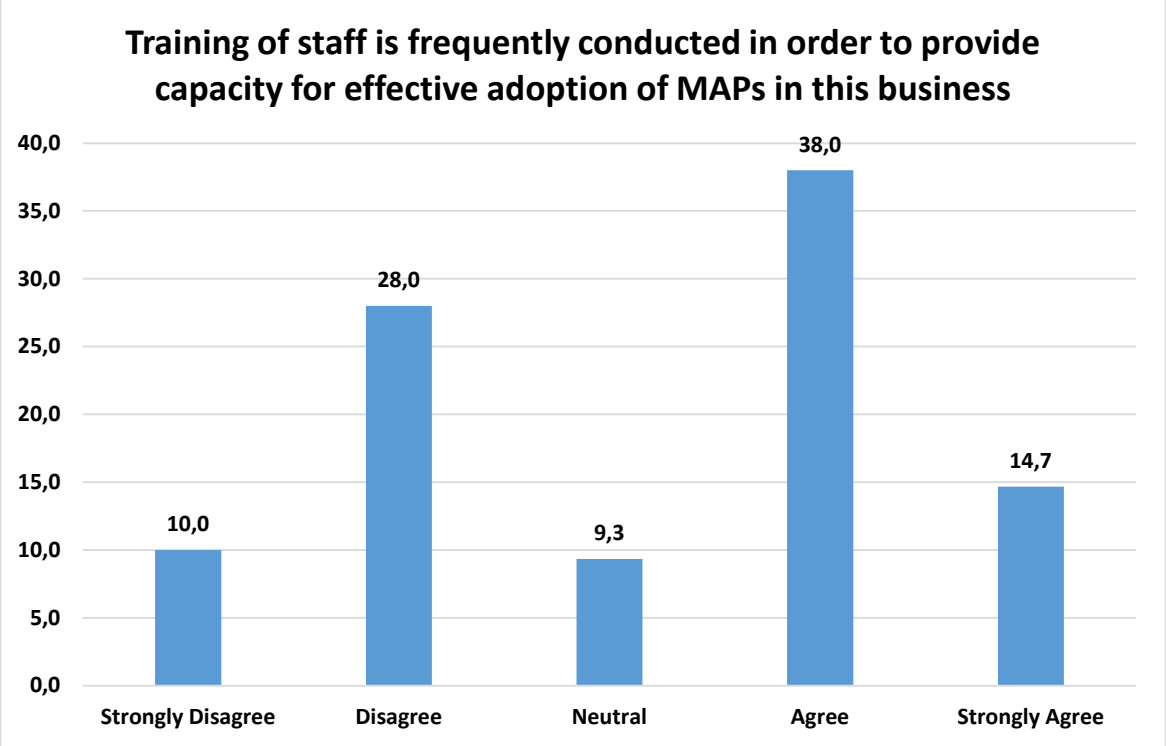


4.5.2.5 Training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in this business

Figure 4.34 reflects whether there was agreement that training of staff was frequently conducted in order to develop capacity for effective adoption of MAPs in the business. Of the responses 38.0% agreed and a further 14.7% strongly agreed that training of staff is frequently conducted. However, a noticeable number of the respondents 28.0% and 10.0% disagreed and strongly disagreed with the statement, while 9.3% of the respondents remained neutral.

While it is clear that slightly more than half (52.7%) of the respondents indicated that training of staff is frequently conducted to improve the capabilities of staff members, this was not practised by many manufacturing SMEs in Durban. These finding are supported by a Chi-square test that was conducted to determine whether training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in the business. The results show that (X^2 = 47.267; df = 4; P = 0,000) for this variable, indicating that training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in the business.

Figure 4.34: Training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in this business

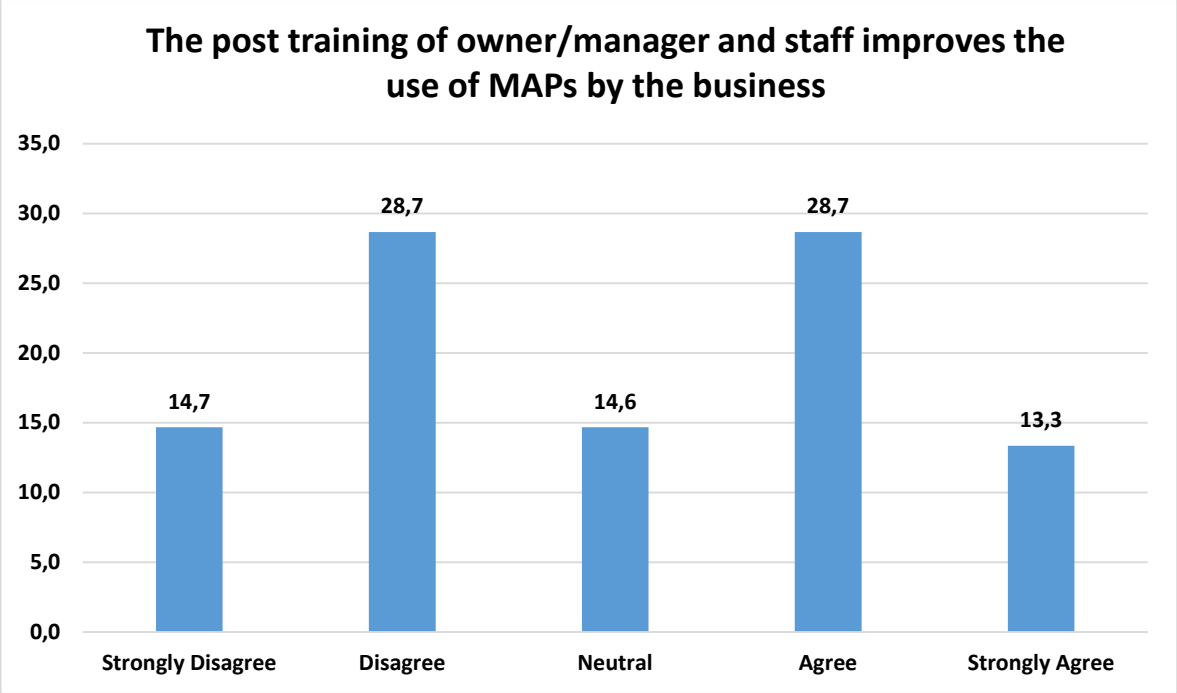


4.5.2.6 The post training of owner/manager and staff improves the use of MAPs by the business

Figure 4.35 below reflects whether post training of owner/managers and staff improves the use of MAPs by the business. Based on the findings, the respondents had contrasting views as more than a quarter (28.7%) disagreed and nearly fifteen percent (14.7%) strongly disagreed with the statement, while 28.7% and 13.3% agreed and strongly agreed, that post training of the owner/manager and staff improves the use of MAPs in the business. 14.6% of the respondents were neutral. These findings are consistent with those in *Figure 4.34* in that manufacturing SMEs lacked consistency in providing training to capacitate staff for effective adoption of MAPs in the business. As a result of that, it can be surmised that the post training of staff as a follow-up measure to determine the level of staff capabilities, was not conducted by many manufacturing SMEs.

As stated by Madsen (2015: 77) many organisations fail to facilitate post training sessions to measure staff levels of competency and this accords with the findings of Ngibe and Lekhanya (2019a: 303) that this failure impedes or limits owners/ managers and employees in understanding whether the skills and knowledge gained from training workshop is applied effectively. These finding are supported by a Chi-square test that was conducted to determine whether post training of owner/managers and staff improves the use of MAPs by the business. The results show that (X^2 = 18.867; df = 4; P = 0,000) for this variable, indicating that post training of owner/managers and staff improves the use of MAPs by the business.

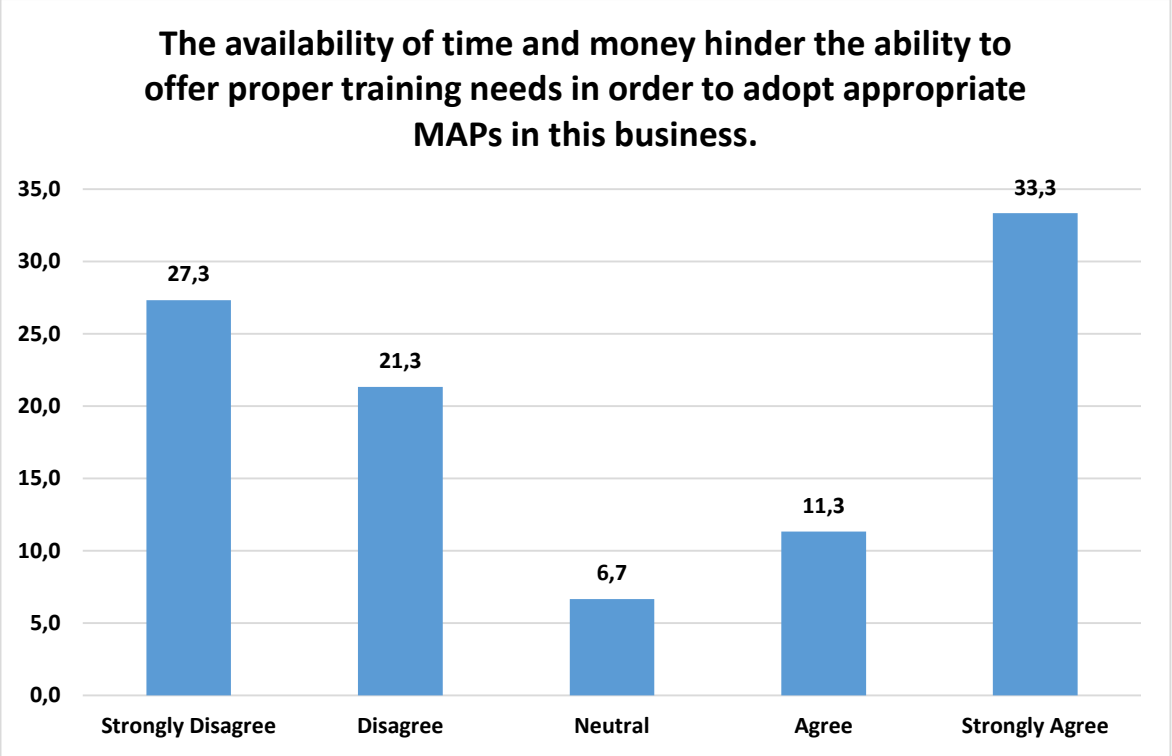
Figure 4.35: The post training of owner/manager and staff improves the use of MAPs by the business



4.5.2.7 The limited availability of time and money hinders the ability to offer proper training in order to adopt appropriate MAPs in this business

Figure 4.36 reflects whether the limited availability of time and money hinder the ability of businesses to offer proper training to meet the needs of employees in order to adopt appropriate MAPs in the business. Based on the findings, over a quarter of the respondents (27.3%) strongly disagreed and slightly over one fifth (21.3%) disagreed, that the availability of time and money hinder the ability of companies to offer proper training in order to adopt appropriate MAPs in the business. On the other hand, a third of the respondents (33.3%) strongly agreed and over a tenth (11.3%) agreed with the statement, with just 6.7% remaining neutral. These findings show that the respondents had contrasting views, since 48.6% did not support the statement while 44.6% supported the statement. Overall, it seems that manufacturing SMEs do not have sufficient time and funding to facilitate and meet staff training needs as much as they would like, indicating that external assistance from supporting agencies may come to be seen as a requirement (SEDA 2019).

Figure 4.36: The availability of time and money hinder the ability to offer proper training needs in order to adopt appropriate MAPs in this business



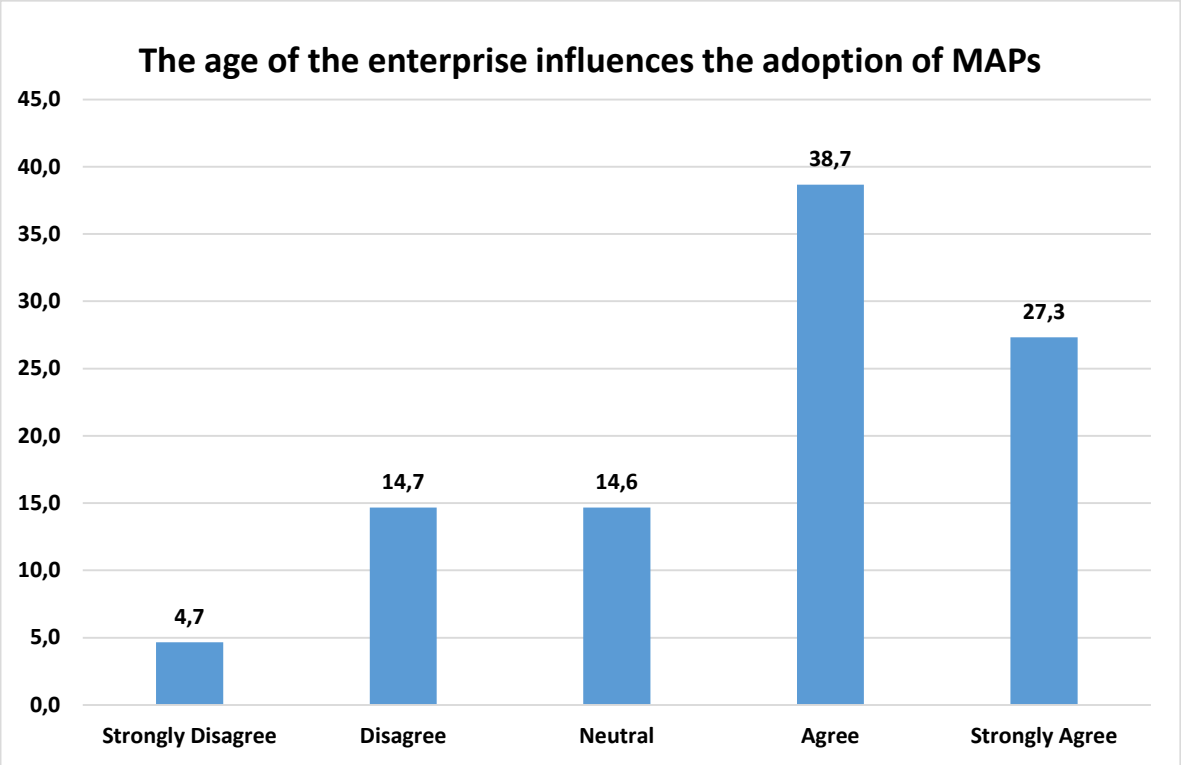
4.5.2.8 The age of the enterprise influences the adoption of MAPs

Figure 4.37 reflects whether the age of the enterprise influences the adoption of MAPs. Based on the findings, 38.7% of the respondents agreed and a further 27.3% strongly agreed, that the age of the enterprise influences the adoption of MAPs. Few respondents (14.7% and 4.7%) disagreed or strongly disagreed respectively, while14.6% were neutral. The findings clearly indicate that the majority of the respondents (66.0%) believed that the age of an enterprise influences the adoption of MAPs.

However, these findings show that the majority of manufacturing SME owners/managers lack awareness and understanding of MAPs as MAPs can be incorporated at the start-up phase of the enterprise. These MAPs can then be gradually integrated to become more sophisticated in order to meet the needs of the enterprise during its growth and sustainability phases.

The results show that (X^2 = 52,067; df = 4; P = 0,000) for this variable, indicating that in the opinion of the respondents the age of the enterprise plays a critical influence in the adoption of MAPs. These findings further show that the majority of manufacturing SME are aware of the needs of incorporating MAPs in their business life cycle, indicating the need for gradually introducing and integrating sophisticated MAPs that will ensure growth and sustainability throughout the business life cycle.

Figure 4.37: The age of the enterprise influences the adoption of MAPs

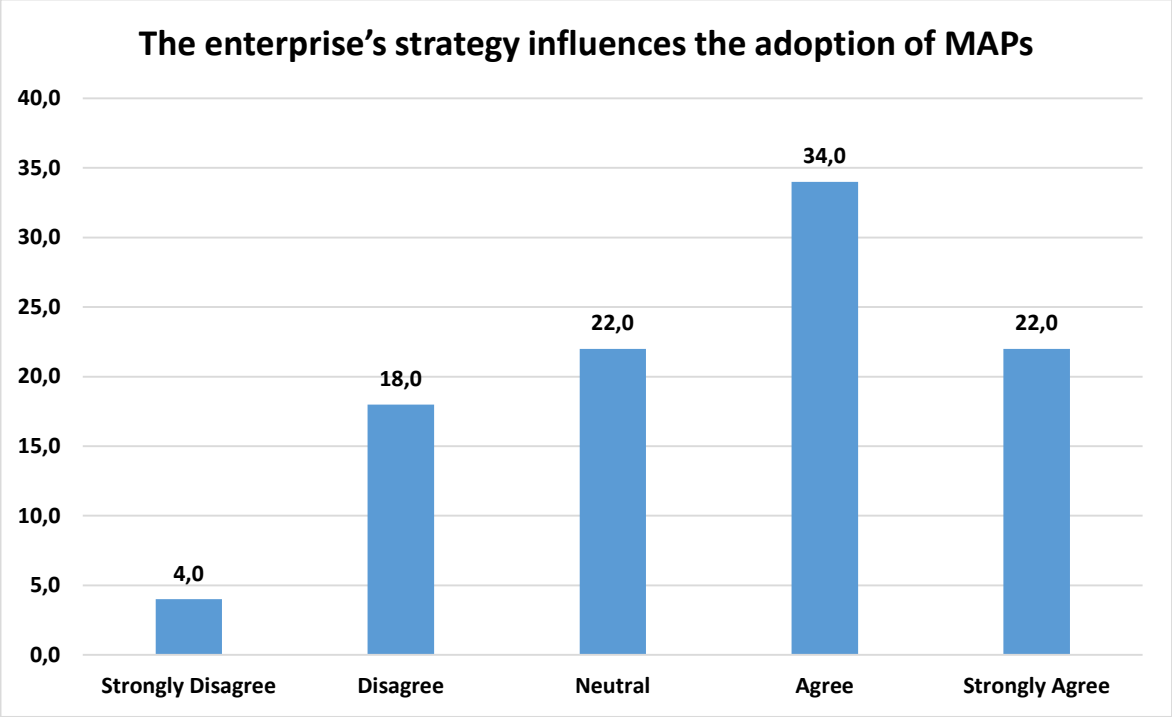


4.5.2.9 The enterprise's strategy influences the adoption of MAPs

Figure 4.38 reflects whether an enterprise's strategy influences the adoption of MAPs. Based on the findings, 34.0% of the respondents agreed and 22.0% strongly agreed that the enterprise's strategy influenced the adoption of MAPs. A considerable number of the respondents (22.0%) remained neutral, while 18.0% and 4.0% respectively disagreed and strongly disagreed that the adoption of MAPs was influenced by the enterprise's strategies.

Although more than half (56.0%) of the respondents were in agreement with the statement, it is also clear that a significant number of the respondents (44.0%) were in disagreement, while others were not certain that an enterprise's strategies influenced the adoption of MAPs. These findings are supported by a Chi-square test that was conducted to determine whether an enterprise's strategy influences the adoption of MAPs. The results show that (X^2 = 34,8; df = 4; P = 0,000) for this variable, indicating that enterprise's strategy influences the adoption of MAPs. These findings are not consistent with those of Azudin and Mansor (2018: 223) but concur with Ahmad and Mohamed Zabri (2015: 775) that the adoption of MAPs is greatly influenced by the enterprise's strategies.

Figure 4.38: The enterprise's strategy influences the adoption of MAPs

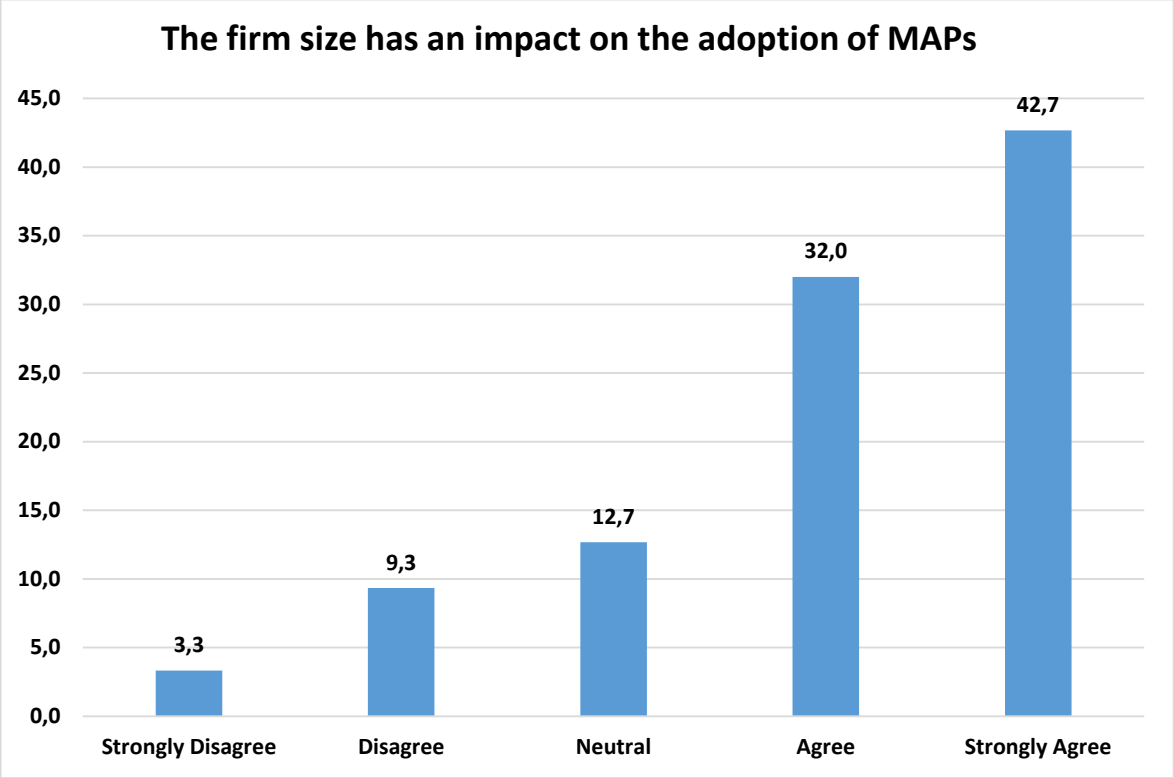


4.5.2.10 The firm size has an impact on the adoption of MAPs

Figure 4.39 reflects whether firm size has an impact on the adoption of MAPs. Based on the findings, the largest number of the respondents (42.7%) strongly agreed and a further 32.0% agreed that firm size has an impact on the adoption of MAPs.

A few respondents (12.7%) were neutral and only 9.3% and 3.3% disagreed and strongly disagreed, that firm size has any impact on the adoption of MAPs. These findings indicate that the bigger the enterprise the more it is capable of flexing its financial muscle in order to acquire or adopt the more sophisticated MAPs required to meet the demands of a large enterprise. These finding are supported by a Chi-square test that was conducted to determine whether firm size has an impact on the adoption of MAPs. The results show that (X^2 = 82,733; df = 4; P = 0,000) for this variable, indicating that the firm size has an impact on the adoption of MAPs. Furthermore, these findings concur with the studies conducted by Ahmad and Mohamed Zabri (2015: 776) and Hu *et al.* (2015: 981) in that the adoption of MAPs by manufacturing SMEs in Durban is mostly determined by the firm's size.

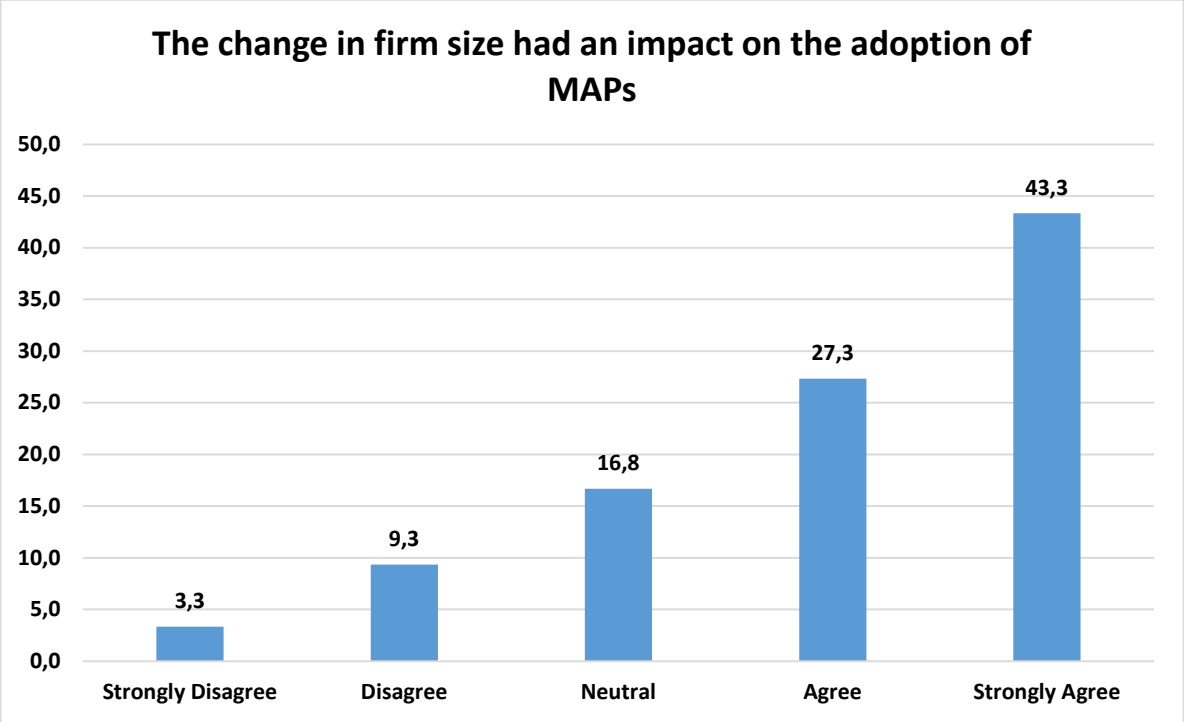
Figure 4.39: The firm size has an impact on the adoption of MAPs



4.5.2.11 The change in firm size had an impact on the adoption of MAPs

As reflected in Figure 4.40 below, a significant number of the respondents (43.3%) strongly agreed that the changes in firm size influenced manufacturing SMEs abilities to adopt relevant MAPs. This statement was further supported by 27.3% of the respondents who agreed. Some of the respondents were neutral (16.8%) with only 12.6 % of the respondents disagreeing with the statement. These findings illustrate that a considerable number of the respondents (76.0%) considered a change in firm size to be one of the critical components that will influence manufacturing SMEs to adopt MAPs. To support these findings, a Chi-square test was used, and the results indicated that $X^2 = 75,067$; df = 4; P = 0, 000, which means that the implication of the change in firm size pertaining to the adoption of MAPs by manufacturing SMEs is valid. As indicated by Gentile-Lüdecke *et al.* (2019: 6) enterprise structural changes require adequate changes to the MAPs implemented by the enterprise. However, these findings contradict Cosenz and Noto (2015: 227) who found that structural changes within SMEs do not influence the adoption of MAPs.

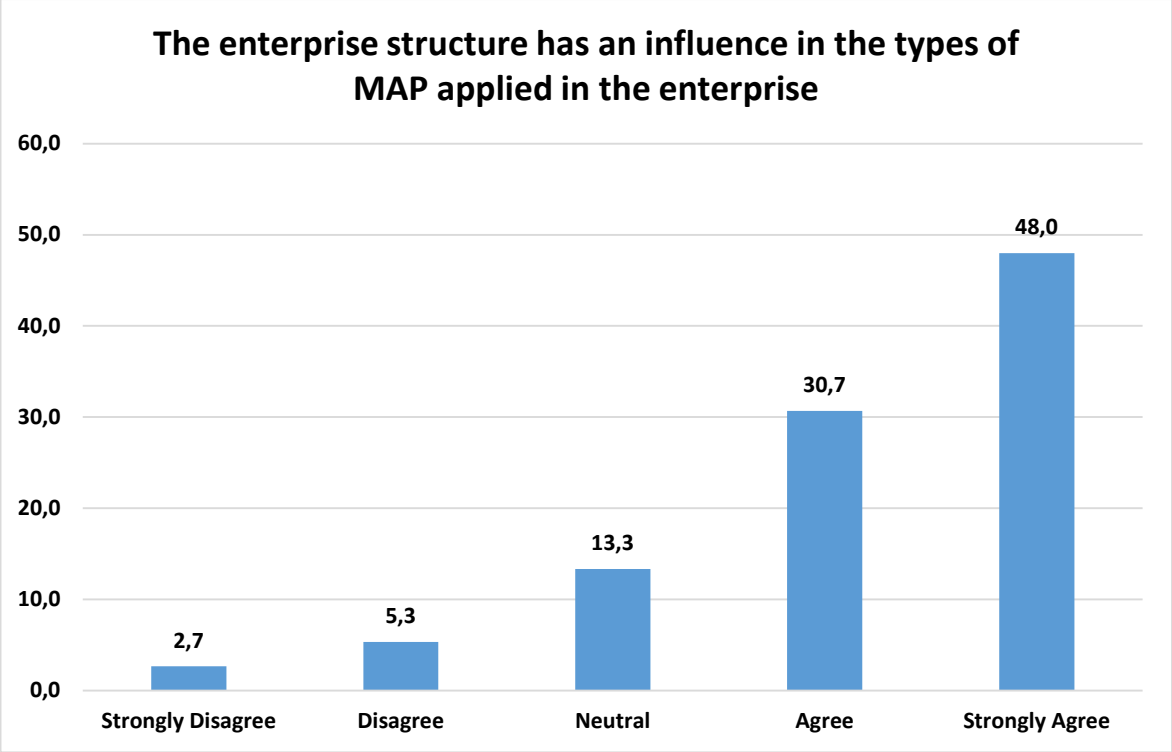
Figure 4.40: The change in firm size had an impact on the adoption of MAPs



4.5.2.12 The enterprise structure has an influence in the types of MAP applied in the enterprise

Figure 4.41 shows whether the enterprise structure has an influence on the types of MAP applied in the enterprise. Almost half (48.0%) of the respondents strongly agreed and a further 30.7% agreed that its structure has an influence on the types of MAP applied by an enterprise. A few respondents (13.3%) were neutral, while only 5.3% and 2.7% disagreed or strongly disagreed with the statement. Thus over three quarters (78.7%) of the respondents considered enterprise structure as a determining factor for the types of MAPs to be applied in the enterprise. To support these findings, a Chi-square test was conducted to determine whether the enterprise structure has an influence on the types of MAP applied in the enterprise. The results show that (X^2 = 109,333; df = 4; P = 0,000) for this variable, indicating that the enterprise structure has an influence on the types of MAP applied in the enterprise. Msomi *et al.* (2019: 11) advised that, for manufacturing SMEs to fully benefit from using MAPs, they would have to examine the enterprise structure and adopt MAPs that are going to be relevant and applicable to the specific structure of the enterprise. This is due to the fact that enterprise structures cannot be generalised for all manufacturing SMEs, so in order to meet the business needs of each manufacturing SME, only relevant MAPs have to be adopted, determined according to the enterprise's structure.

Figure 4.41: The enterprise structure has an influence in the types of MAP applied in the enterprise

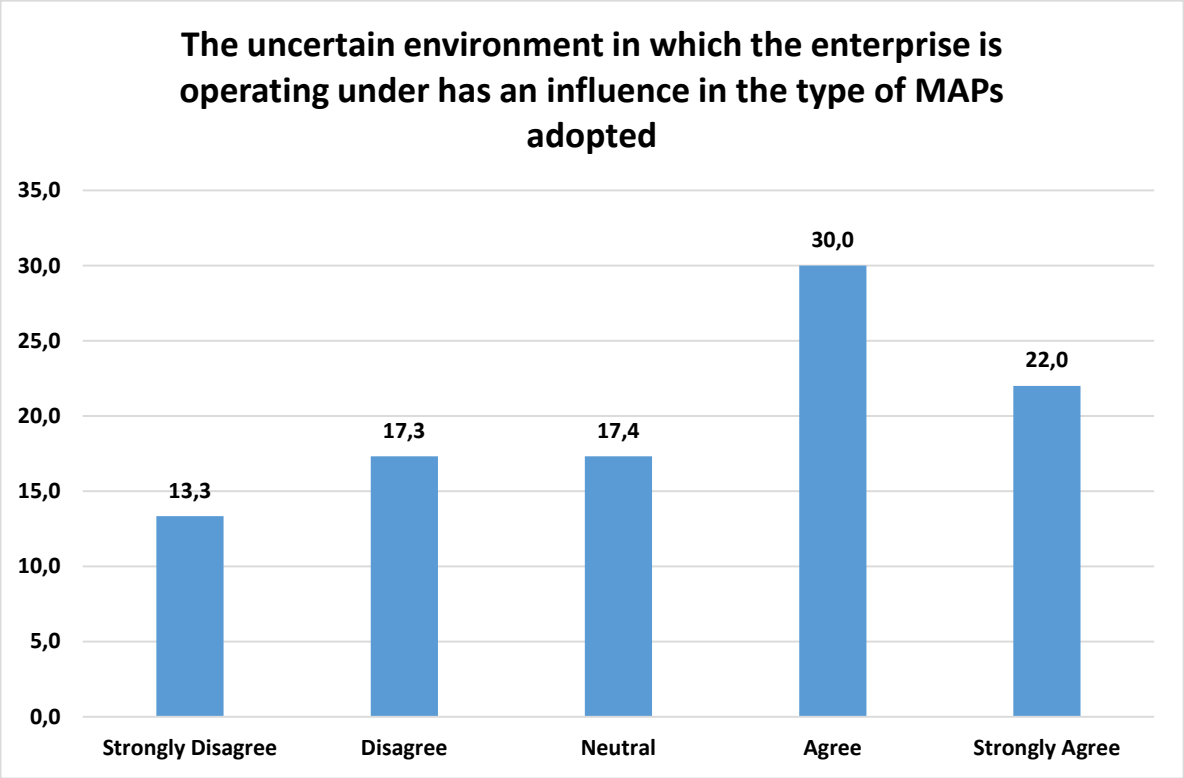


4.5.2.13 The uncertain environment in which the enterprise is operating has an influence in the type of MAPs adopted

Figure 4.42 indicates whether the uncertain environment in which the enterprise is operating has an influence on the type of MAPs adopted. Based on the findings, 30.0% of the respondents agreed and a further 22.0% strongly agreed that an uncertain environment plays a role on the type of MAPs adopted. A considerable number of the respondents (17.4%) were neutral, while a similar number (17.3%) disagreed and 13.3% strongly disagreed with the statement. The findings therefore show that slightly more than half (52.0%) of the respondents considered an uncertain business environment to be one of the external factors that has an influence on adoption of MAPs by the enterprise.

However, 47.8% of the respondents were either neutral or disagreed, indicating that many manufacturing SME owners do not perceive these external factors, which are beyond the company's control, as having an influence on the type of MAPs adopted within their enterprises. This might also be due to the fact that some manufacturing SMEs are reluctant to formulate new strategic MAPs that can deal with these uncertainties in the environment, and, as a result, they tend to focus on either their business risk or inherent risk.

Figure 4.42: The uncertain environment in which the enterprise is operating under has an influence in the type of MAPs adopted



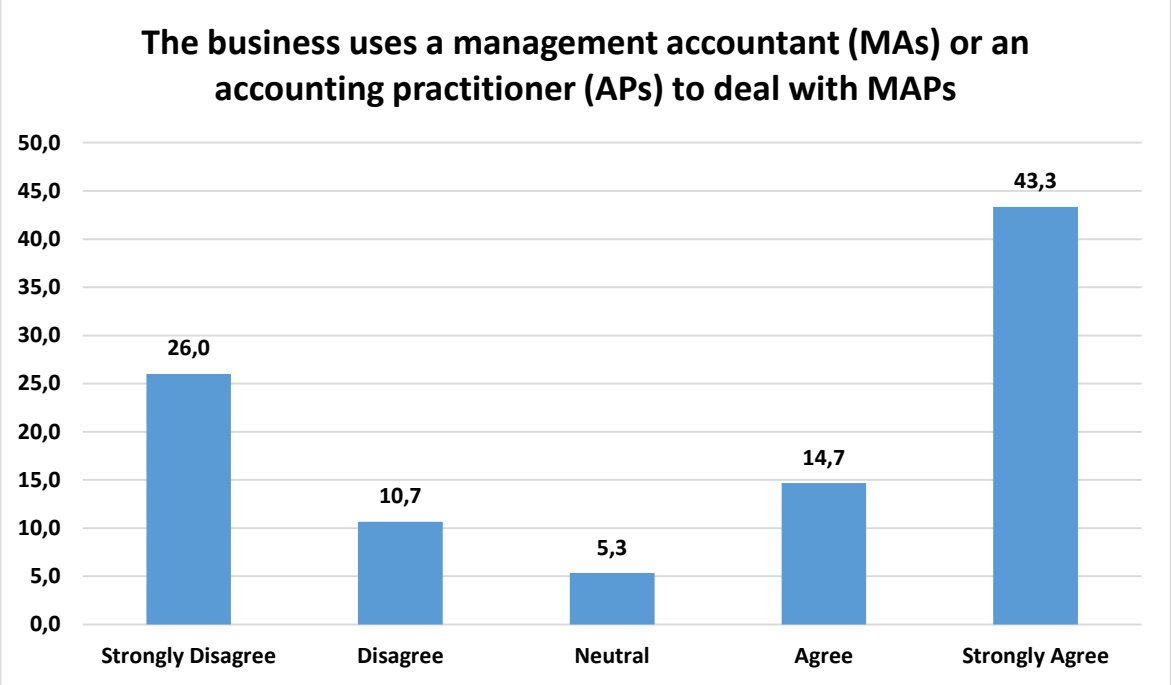
4.5.2.14 The business uses a management accountant (MAs) or an accounting practitioner (APs) to deal with MAPs

Figure 4.43 reflects whether the business uses a management accountant or an accounting practitioner to deal with MAPs. Based on the findings, 43.3% of the respondents strongly agreed and 14.7% further agreed that the business uses a management accountant or an accounting practitioner to deal with MAPs.

A considerable number of respondents (26.0% and 10.7%) strongly disagreed or disagreed respectively, that management accountants or accounting practitioners were employed to deal with MAPs, while neutral responses were returned by 5.3% of the respondents. These findings imply that almost 60% of manufacturing SMEs do use the services provided by management accounts and/ or accounting practitioners. This accords with the literature which suggests that most South African manufacturing SMEs depend on accountants'/ management accountants'/ accounting practitioners to provide them with strategic advice on how to operate their businesses (Carey 2015: 168). However, it is evident that other manufacturing SMEs do not have the funds to acquire such services as they have limited capital resources.

These findings are supported by a Chi-square test which was conducted to determine whether the enterprise structure has an influence on the types of MAP applied in the enterprise. The results show that (X^2 = 68,333; df = 4; P = 0,000) for this variable, indicating that the business uses a management accountant or an accounting practitioner to deal with MAPs.

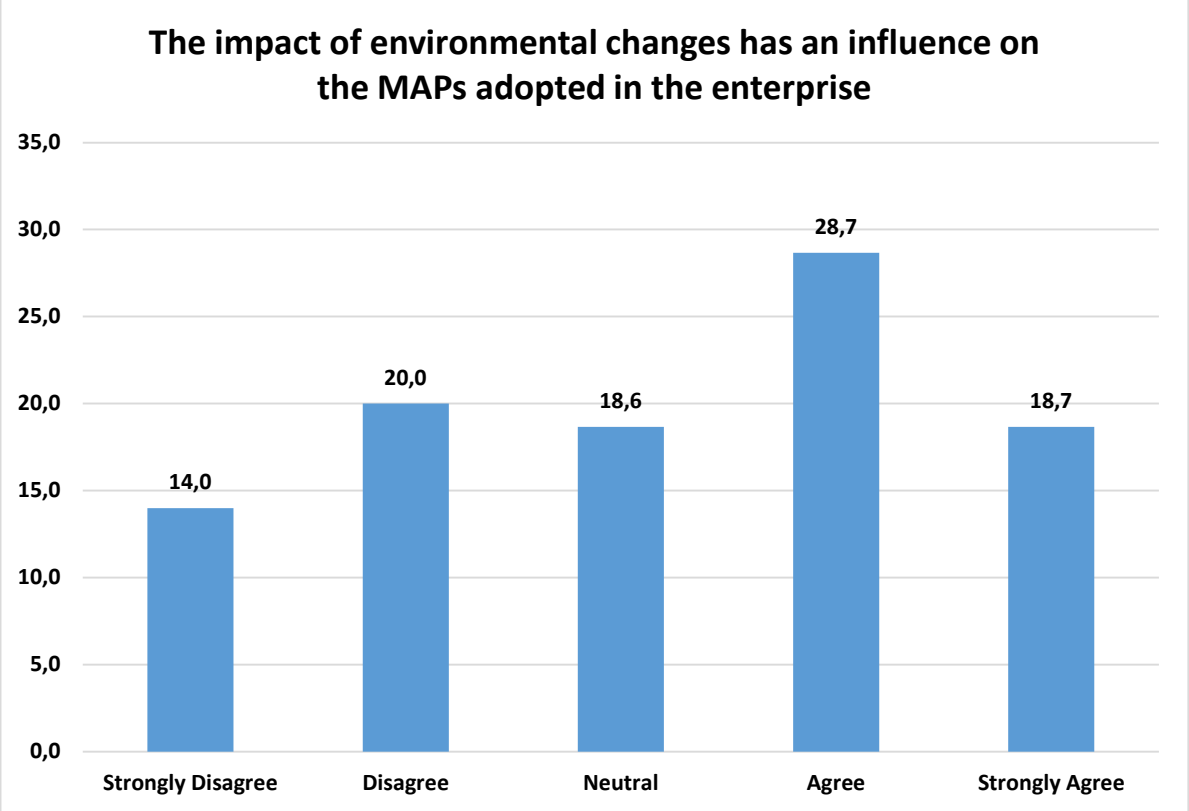
Figure 4.43: The business uses a management accountant (MAs) or an accounting practitioner (APs) to deal with MAPs



4.5.2.15 The impact of environmental changes has an influence on the MAPs adopted in the enterprise

Figure 4.44 reflects whether the impact of environmental change has an influence on the MAPs adopted by an enterprise. Based on the findings, 28.7% of the respondents agreed and 18.7% strongly agreed that the impact of environmental changes does influence the type of MAPs adopted by the enterprise. A considerable number of the respondents (34.0%) disagreed and strongly disagreed with the statement, while 18.6% were neutral. These findings show that the participants had varying views on the subject, which indicates that many participants did not view the adoption of MAPs as strongly related to, or influenced by, environmental changes.

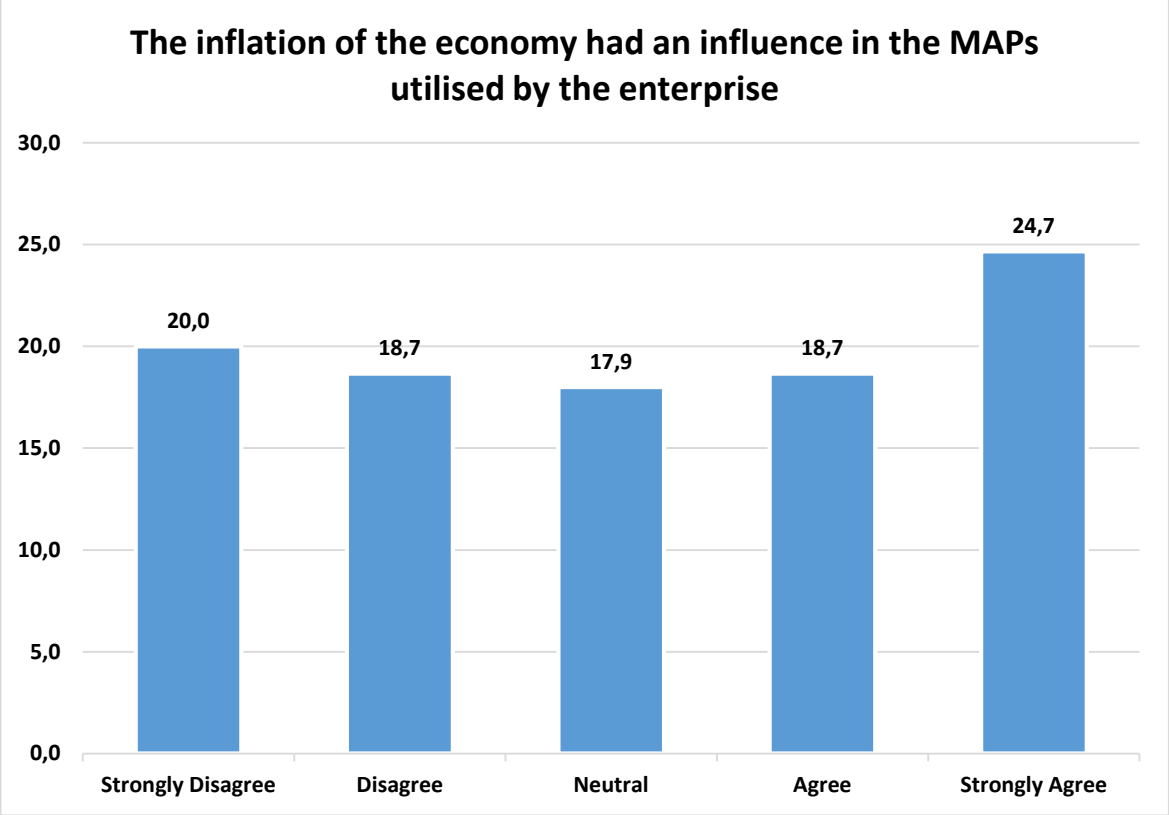
Figure 4.44: The impact of environmental changes has an influence on the MAPs adopted in the enterprise



4.5.2.16 Inflation in the economy had an influence in the MAPs utilised by the enterprise

Figure 4.45 shows whether inflation was seen to have an influence on the MAPs used by an enterprise. Based on the findings, 24.7% of the respondents strongly agreed, and a further 18.7% agreed, that inflation has an influence on the MAPs used in an enterprise. However, there were a considerable number (20.0%) and 18.7% who either strongly disagreed or disagreed with the statement, while 17.9% remained neutral. Thus it was clear that the respondents had differing views on the subject, indicating that inflation in South Africa's economy is considered by some manufacturing SMEs as an element that influences the utilisation of MAPs, but that others disagree.

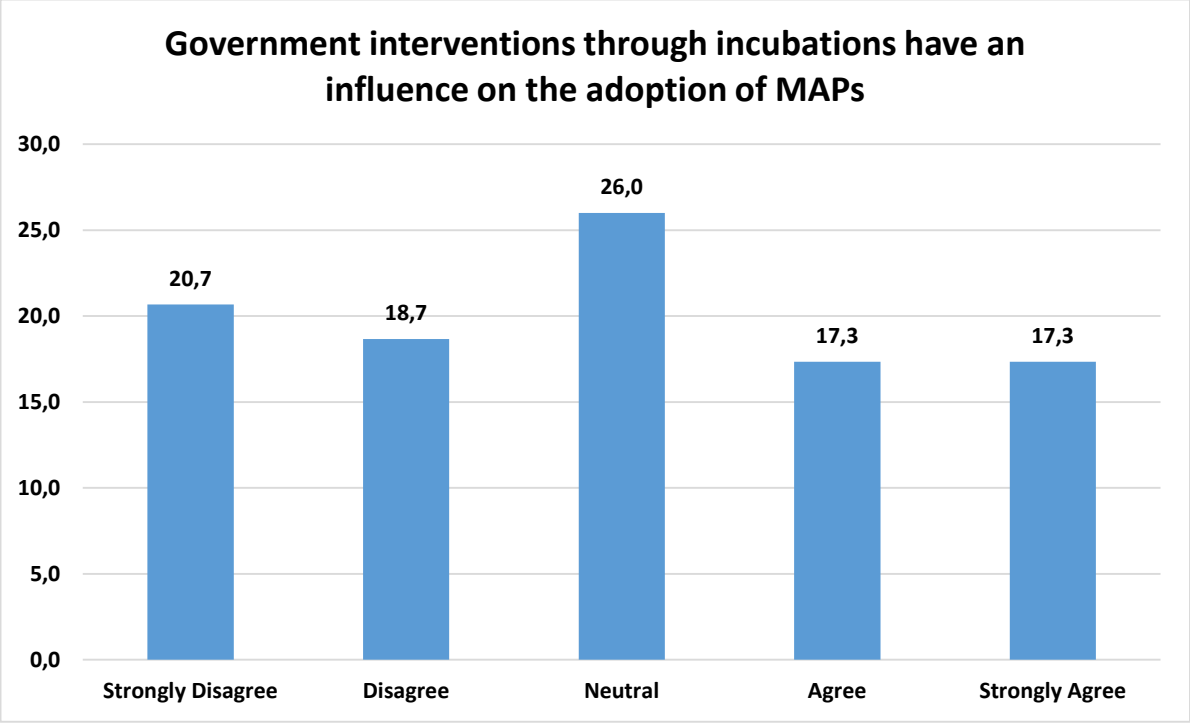
Figure 4.45: The inflation of the economy had an influence in the MAPs utilised by the enterprise



4.5.2.17 Government interventions through incubations have an influence on the adoption of MAPs

Figure 4.46 reflects whether respondents believed that government interventions through incubations have an influence on the adoption of MAPs. Based on the findings, 26.0% of the respondents were neutral, while 20.7% of the respondents strongly disagreed with 18.7% disagreed with the statement. These findings provide a broad picture of the fact that most of the respondents (65.4%) were either neutral or disagreed with the statement. This suggests that the participants were either unaware of any existing interventions offered by government business incubators, or that these government interventions had no influence on their decisions concerning the types of MAPs to be adopted. The findings therefore indicate that government business incubators have a very minimal influence on the adoption of MAPs as only just over a third of respondents (34.6%) agreed with the statement.

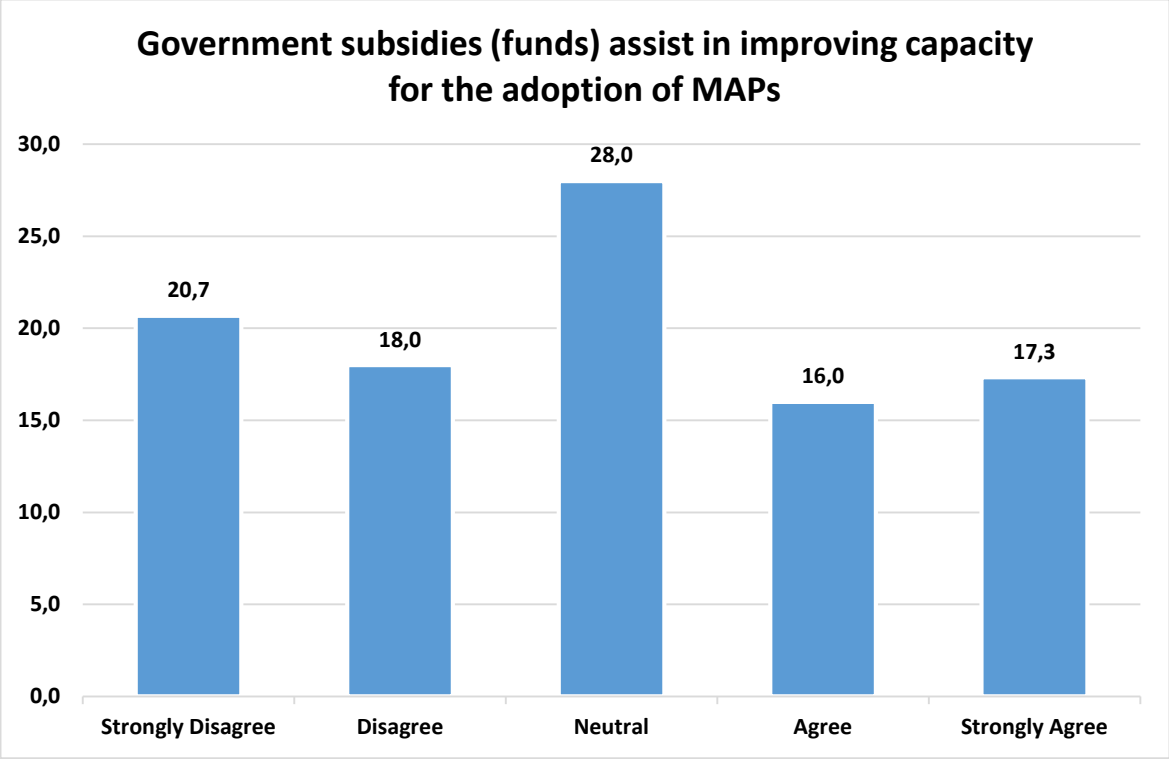
Figure 4.46: Government interventions through incubations have an influence on the adoption of MAPs



4.5.2.18 Government subsidies (funds) assist in improving capacity for the adoption of MAPs

Figure 4.47 indicates whether government subsidies (funds) are seen to assist in improving capacity for the adoption of MAPs. Based on the findings, 28.0% of the respondents were neutral while a considerable number of the respondents (20.7% and 18.0%) strongly disagreed or disagreed respectively with the statement, while only 17.3% and 16.0% agreed or strongly agreed that government subsidies assist in capacitating staff with skills to manage MAPs. The findings of this study support Dlamini (2017: 3) and Ayandibu and Houghton (2017:137) that SMEs are not accessing this support to sustain their business operations. These findings indicate that manufacturing SMEs in Durban are finding it difficult to acquire the funding which is critically needed by many of them, more especially for capacity building to support the development of owners/manager and staff members.

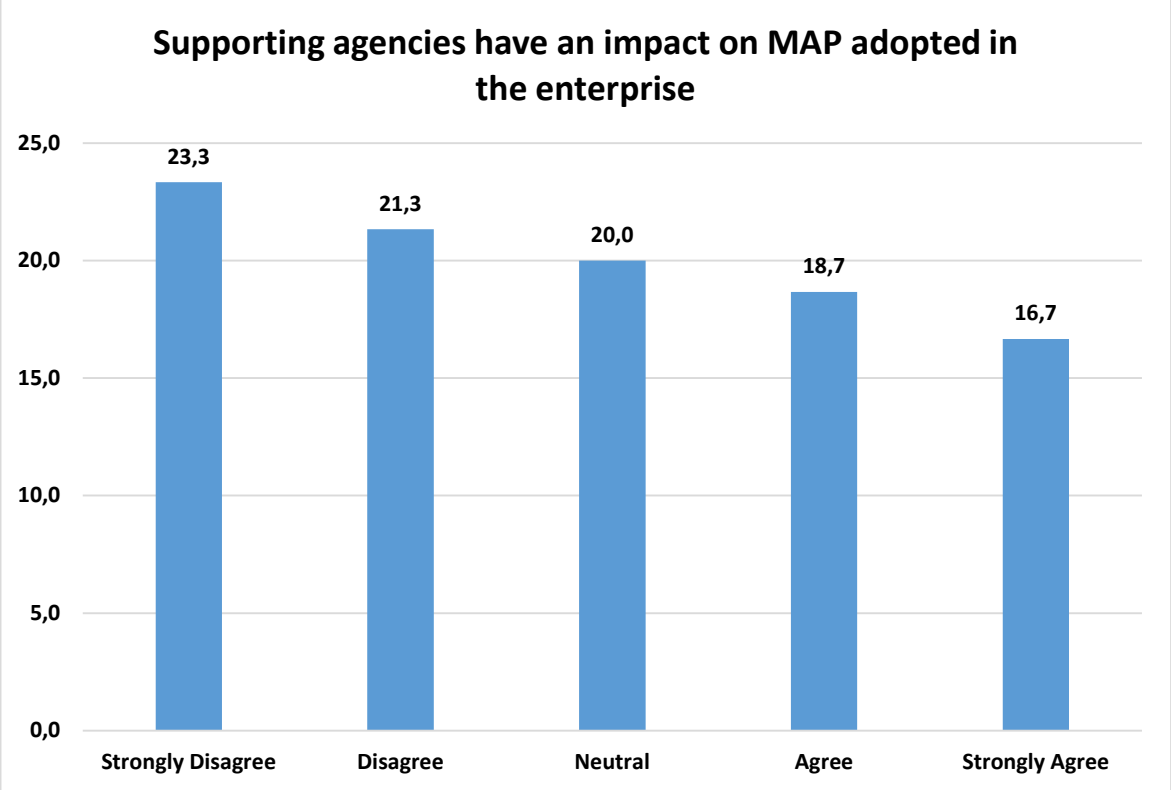
Figure 4.47: Government subsidies (funds) assist in improving capacity for the adoption of MAPs



4.5.2.19 Supporting agencies have an impact on MAPs adopted in the enterprise

Figure 4.48 reflects whether supporting agencies are seen to have an impact on whether MAPs are adopted by an enterprise. Based on the findings, 23.3% of the respondents strongly disagree and 21.3% further disagreed that supporting agencies had an impact on whether MAPs are adopted by an enterprise, with 20.0% of the respondents remaining neutral. These findings clearly indicate that most manufacturing SMEs do not consider, or value, supporting agencies for their impact on the MAPs adopted by an enterprise – only just over one third (35.4%) agreeing with the statement. Possible reasons may include SMEs' owner/managers' faith in their independent capacities to be able to form and sustain their own enterprises.

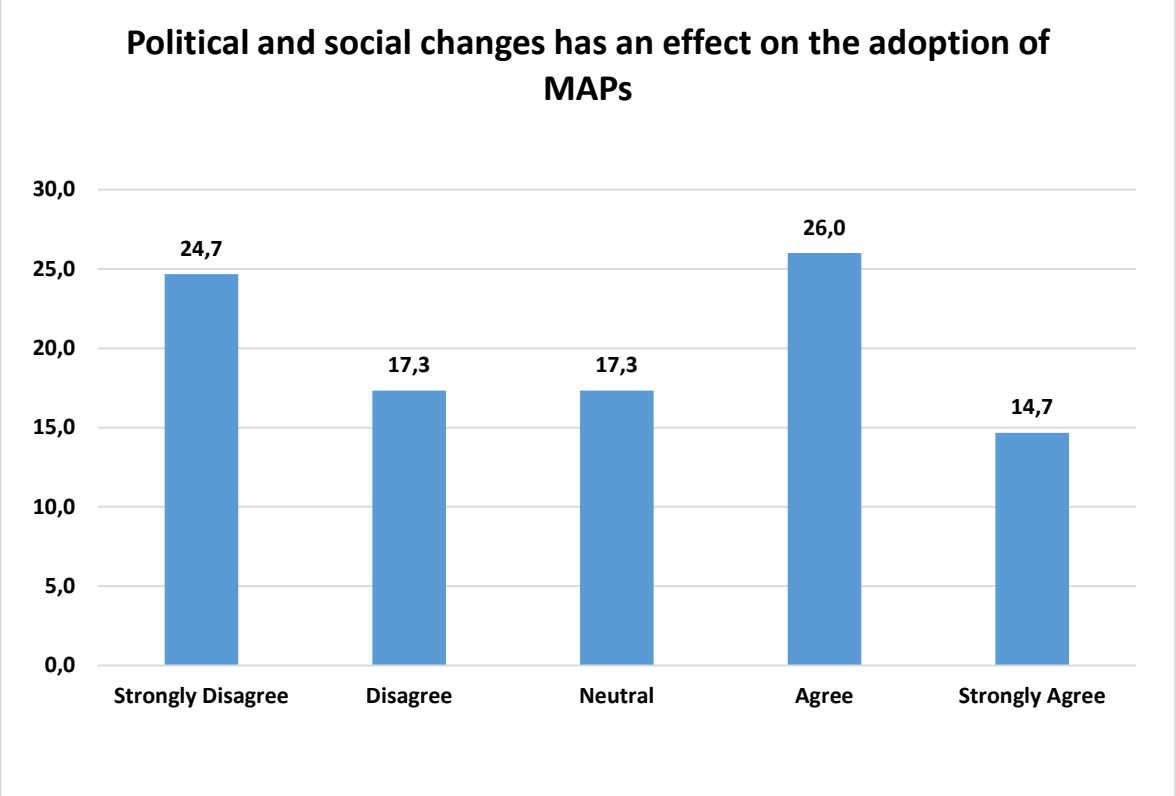
Figure 4.48: Supporting agencies have an impact on MAP adopted in the enterprise



4.5.2.20 Political and social changes have an effect on the adoption of MAPs

Figure 4.49 below indicates whether political and social changes have an effect on the adoption of MAPs. Based on the findings, 26.0% of the respondents agreed and a further 14.7% strongly agreed that political and social changes have an effect on the adoption of MAPs. However, there was also a considerable number (24.7%) who strongly disagreed and 17.3% further disagreed with the statement, while 17.3% of the respondents remained neutral. The findings therefore provide a very mixed picture, as the respondents clearly had widely differing views about whether political and social changes have an effect on the adoption of MAPs by an enterprise. For some manufacturing SMEs, political and social changes have little or no impact on the type of MAPs adopted in their enterprises, possibly due to the fact that manufacturing SMEs are not regulated or directly influenced by the government when selecting the type of MAPs, they adopt (Bushe 2019: 7).

Figure 4.49: Political and social changes have an effect on the adoption of MAPs

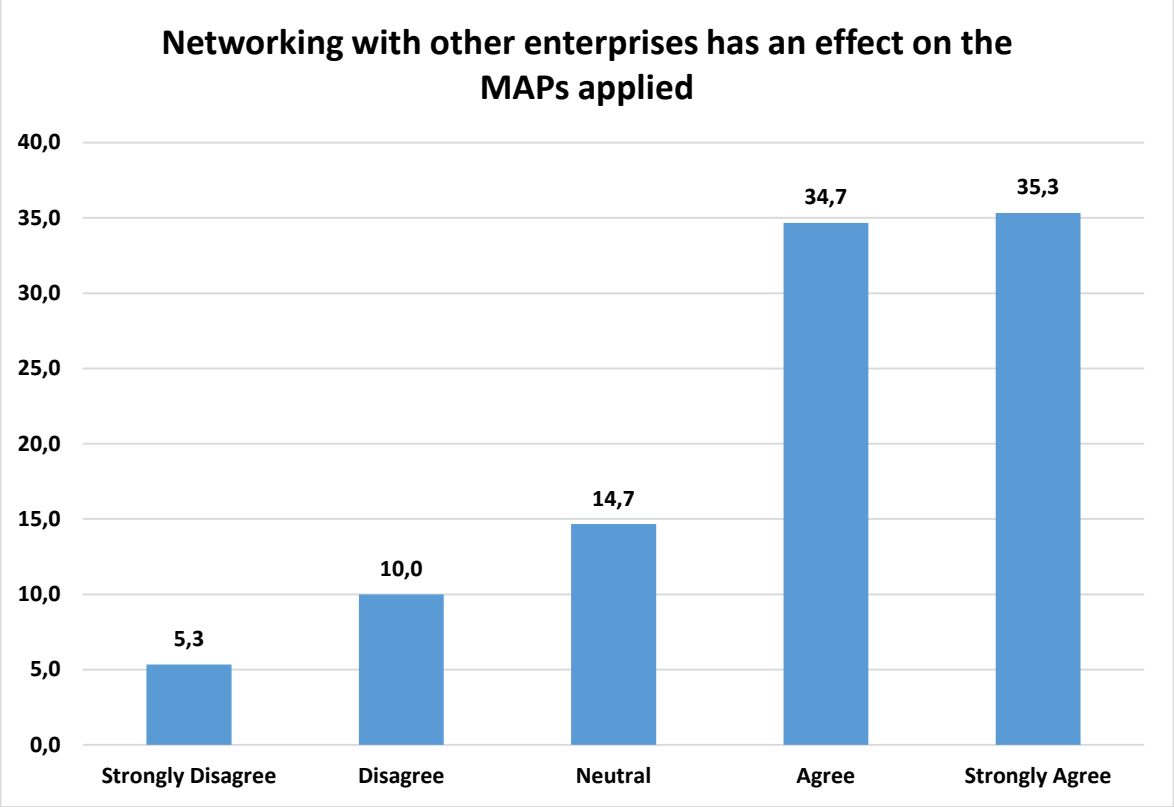


4.5.2.21 Networking with other enterprises has an effect on the MAPs applied

Figure 4.50 below reflects whether networking with other enterprises is seen to have an effect on the MAPs adopted. Based on the findings, 35.3% of the respondents strongly agreed and a further 34.7% agreed that networking with other enterprises had an influence on the MAPs they used. 14,7% were neutral, with only 10.0% and 5.3% disagreeing or strongly disagreeing with the statement. These findings clearly indicate that the majority (70%) of the respondents considered networking with other enterprises to have an influence on the type of MAPs they applied.

The results show that (X^2 = 59,533; df = 4; P = 0,000) for this variable, indicating that networking with other enterprises influences the adoption of MAPs in an enterprise. This may be due to the fact that manufacturing SMEs are operating in a very congested environment with fierce competition. Therefore, understanding what your competitors and counterparts are doing in order to succeed, can have an influence on the type of MAPs to be applied to help your enterprise to be competitive.

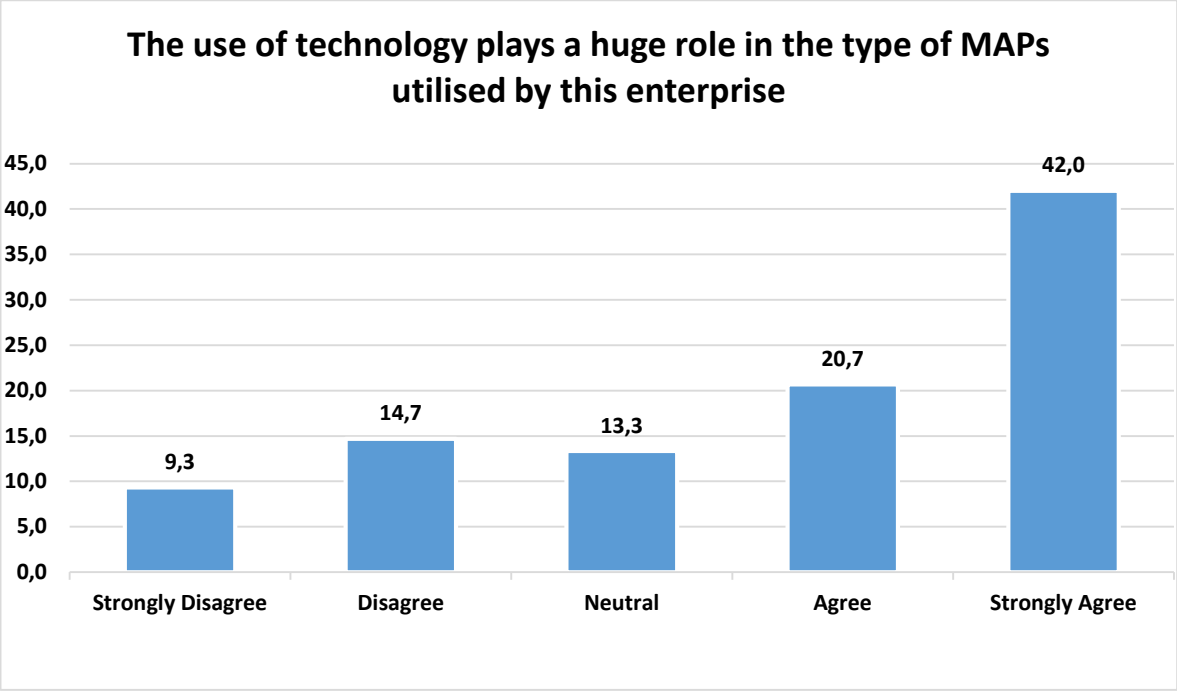
Figure 4.50: Networking with other enterprises has an effect on the MAPs applied



4.5.2.22 The use of technology plays a huge role in the type of MAPs utilised by this enterprise

Figure 4.51 below shows whether the use of technology plays a major role in the type of MAPs employed. Based on the findings, 42.0% of the respondents strongly agreed and a further 20.7% agreed, that the use of technology plays a major role in the type of MAPs used by the enterprise. Only a few respondents (14.7%) disagreed and 9.3% strongly disagreed, while 13.3% remained neutral. These findings are supported by a Chi-square test which was conducted to determine whether the use of technology plays a major role in the type of MAPs used by an enterprise. The results show that (X^2 = 50,333; df = 4; P = 0,000) for this variable, indicating that the use of technology does play a major role in the type of MAPs utilised by the enterprise. These findings indicate clearly that manufacturing SMEs in Durban need to start considering and investing in current advanced technology if they are to exploit the full benefits of the MAPs that they are using. The adoption of technology by manufacturing SMEs has long been considered as a key competitive strategy for sustaining and growing a firm.

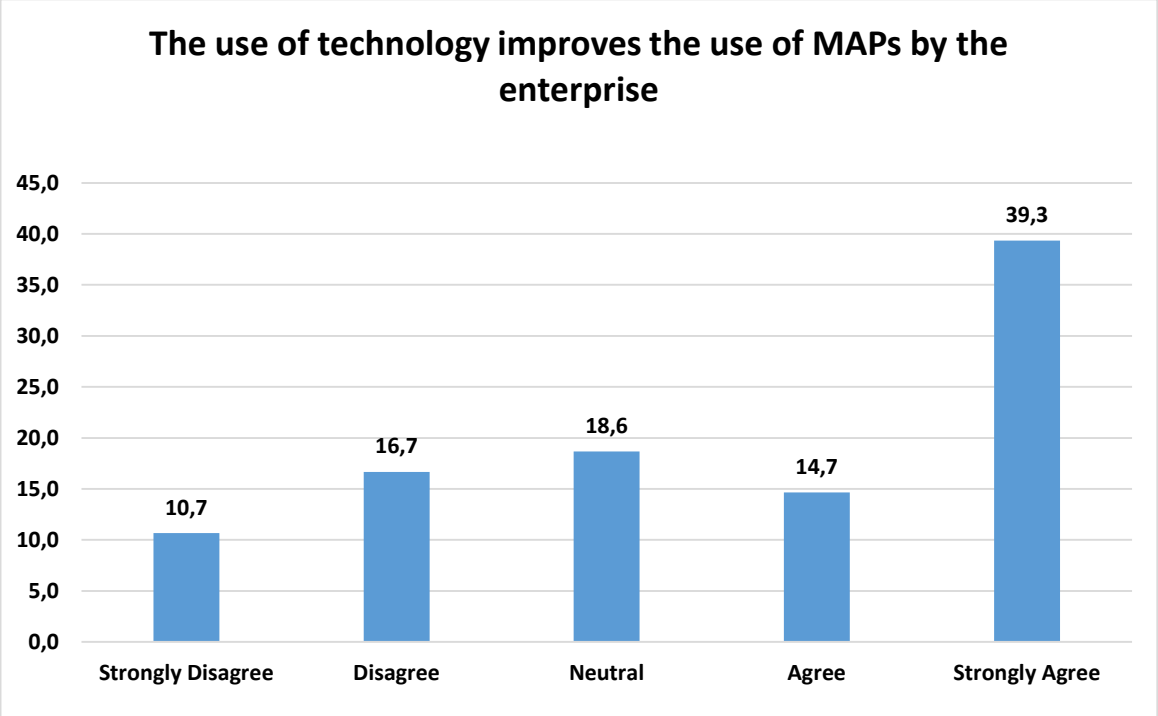
Figure 4.51: The use of technology plays a huge role in the type of MAPs utilised by this enterprise



4.5.2.23 The use of technology improves the use of MAPs by this business

Figure 4.52 below reflects whether the use of technology improves the usage of MAPs by an enterprise. Based on the findings, 39.3% of the respondents strongly agreed and a further 14.7% agreed, that the use of technology improves the usage of MAPs. 18.6% of the respondents were neutral about the statement with only a few respondents (16.7% and 10.7%) disagreeing or strongly disagreeing. Even though more than half (54%) of the respondents considered technology as essential for improving the use of MAPs, a considerable number (46%) were either neutral or in disagreement with the statement. These findings are supported by a Chi-square test which was conducted. The results show that (X^2 = 37,667; df = 4; P = 0,000) for this variable, indicating that the use of technology improves the usage of MAPs by the enterprise. Based on these findings, it seems possible that manufacturing SMEs are struggling to acquire or adopt new technologies due to their limited resources, and the fact that these advanced technological tools can be extremely expensive.

Figure 4.52: The use of technology improves the use of MAPs by this business

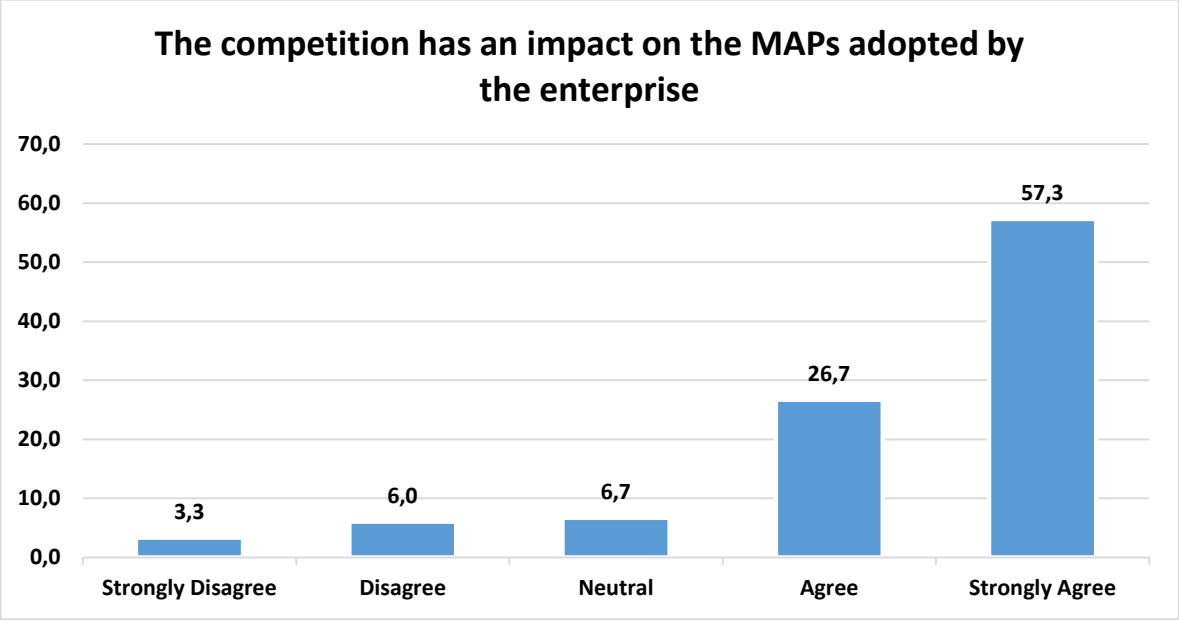


4.5.2.24 The competition has an impact on the MAPs adopted by the enterprise

Figure 4.53 below indicates whether competition has an impact on the MAPs adopted by an enterprise. Based on the findings, the majority (57.3%) of the respondents strongly agreed, and a further 26.7% agreed, that competition has an impact on the MAPs adopted. Very few (6.7%) respondents were neutral, while only 6.0% disagreed and 3.3% strongly disagreed, that competition has an impact on the adoption of MAPs. These findings are supported by a Chi-square test which was conducted to determine whether competition has an impact on the MAPs adopted by the enterprise. The results show that (X^2 = 156,733; df = 4; P = 0,000) for this variable, indicating that competition has an impact on the MAPs adopted by the enterprise.

These findings indicate clearly that a large majority (84%) of the respondents viewed competition as one of the critical components influencing the MAPs adopted by an enterprise. Considering the fierce competition amongst manufacturing SMEs in Durban, these findings emphasise the need for manufacturing SMEs to adopt MAPs in order to increase their competitive edge.

Figure 4.53: The competition has an impact on the MAPs adopted by the enterprise

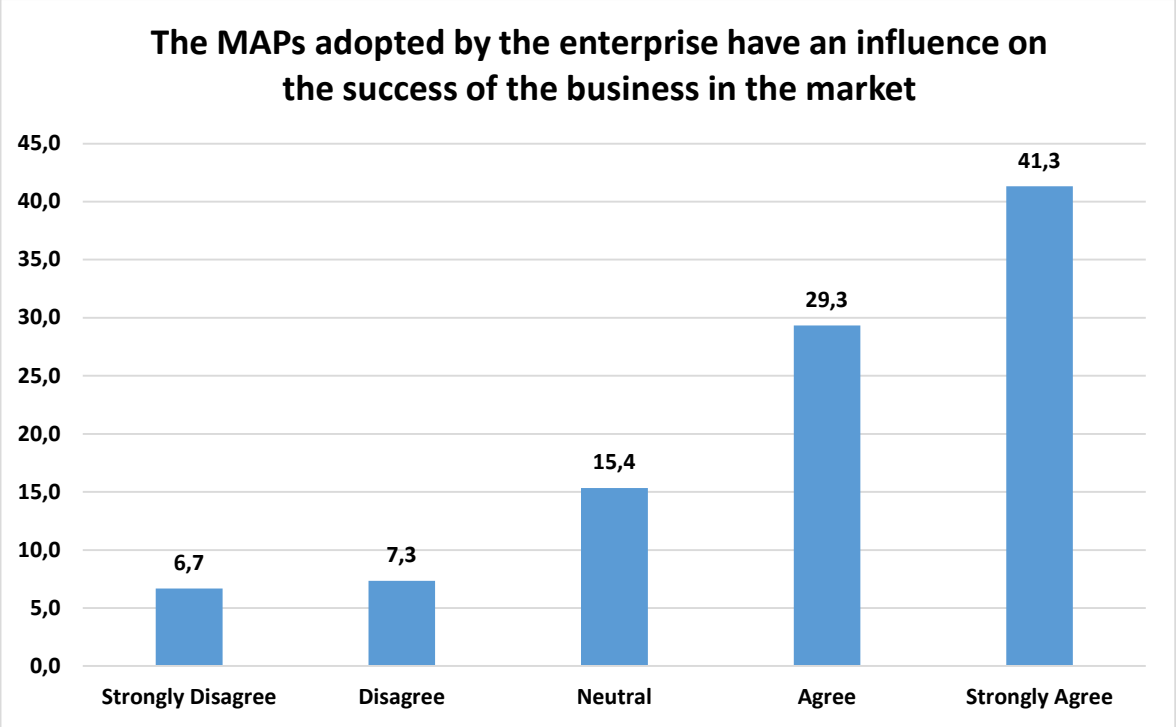


4.5.2.25 The MAPs adopted by the enterprise have an influence on the success of the business in the market

Figure 4.54 below reflects whether MAPs adopted by the enterprise have an influence on the success of the business. Based on the findings, 41.3% of the respondents strongly agreed, and a further 29.3% agreed, that MAPs adopted by the enterprise have an influence on the success of the business in the marketplace. A few respondents (15.4%) were neutral, while only 7.3% and 6.7% disagreed and strongly disagreed with the statement respectively. These findings are supported by a Chi-square test which was conducted to determine whether MAPs adopted by the enterprise have an influence on the success of the business in the market. The results show that (X^2 = 67,667; df = 4; P = 0,000) for this variable, indicating that MAPs adopted by the enterprise have an influence on the market success of the business.

Thus these findings provide a clear indication that the majority of business owners (70.6%) believe that MAPs contribute significantly towards the success and sustainability of the business. They therefore also indicate that for manufacturing SMEs to attain sustainable growth, they will have to consider adopting relevant MAPs.

Figure 4.54: The MAPs adopted by the enterprise have an influence on the success of the business in the market

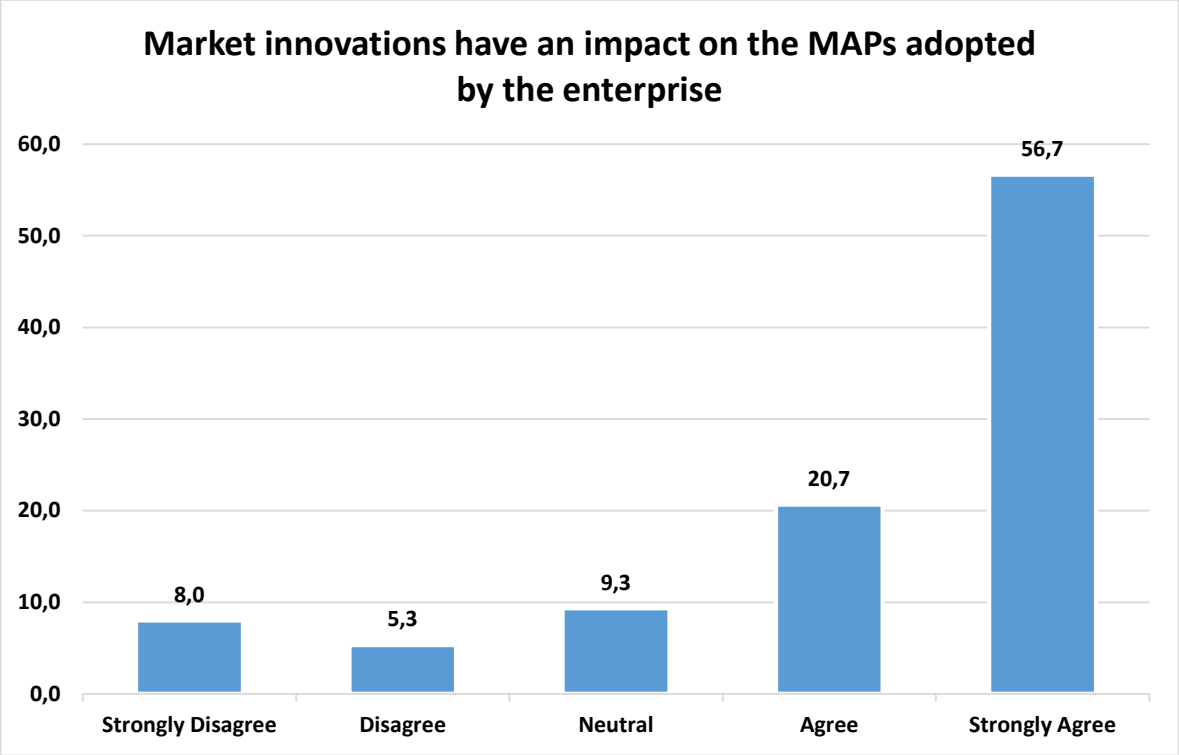


4.5.2.26 Market innovations have an impact on the MAPs adopted by the enterprise

Figure 4.55 below indicates if market innovations have an impact on the adoption of MAPs in an enterprise. Based on the findings, the majority (56.7%) of the respondents strongly agreed, and a further 20.7% agreed, that market innovations have an impact on the MAPs adopted by an enterprise. Very few (9.3%) respondents were neutral, and only 8.0% and 5.3% strongly disagreed and disagreed respectively with the statement. These findings are supported by a Chi-square test which was conducted to determine whether market innovations have an impact on the MAPs adopted by the enterprise. The results show that (X^2 = 136,333; df = 4; P = 0,000) for this variable, indicating that market innovations have an impact on the MAPs adopted by an enterprise.

These findings provide a clear indication that manufacturing SME owners/managers/ other decision makers are aware of market innovation trends, and that they consider them as very influential on the kinds of MAPs adopted.

Figure 4.55: Market innovations have an impact on the MAPs adopted by the enterprise



4.5.2.27 CONCLUSION OF OBJECTIVE 2

This objective was important for the study as it provided detailed insights into what manufacturing SMEs in Durban perceive to be most influential for the adoption of MAPs in their enterprises. Internal factors such as the skills of the owner, firm structure and experience of the owner were regarded as significant factors for the adoption of MAPs, while external factors such as competition, market innovation and market success had the highest influence on their adoption. However, factors such as government interventions, technology, the services of management accountants or accounting practitioners, and changes in the environment, provided different perspectives sometimes differing from previous studies as reflected in the literature. It can be noted also that the findings were in line with contingency-based theory as both internal and external factors were seen to have some level of influence on the adoption of MAPs by manufacturing SMEs in the Durban area.

4.6 RELIABILITY AND VALIDITY

Wood and Ross-Kerr's warn (2011: 198) that "the data collected is only as good as the instrument used to collect it" and the researcher believed it to be essential to use the correct tools to measure the data, and to draw information from it which would be able to resolve the research problem. Reliability measures the extent in which an instrument will yield similar results when it is carried out continuously on that same sample. This meant that if the researcher repeatedly collected data from the targeted sample under similar, effectively controlled, conditions, then the outcome should be the same. Table 4.2 below proves that the research tool used to conduct this study was reliable. Validity deals with the accuracy of the research tool and it is closely linked with reliability.

The benefit of testing reliability and validity of a research instrument is to show that there is a common understanding when the participants are interpreting the questions, and also to measure what the instrument was intended to measure from the outset.

The most common reliability test done is the Cronbach's Co-Efficient Alpha with a perfect score of 1.00 (Sekaran and Bougie 2006: 307). The Cronbach's Alpha measures how each item correlates with the others and the greater the Cronbach's Alpha, the greater the reliability.

Table 4.2:Reliability

	Section	Number of Items	Cronbach's Alpha
B10	Cost accounting systems that are adopted in the enterprise in order to control expenditures	5	0,606
B11	MAPs are related to Planning/Budgeting/Control system are adopted in the enterprise to efficiently and effectively organise the resources	5	0,681
B12	Decision support systems that are adopted in the enterprise to optimise the resource allocations	4	0,704
B13	MAPs relating to pricing policy that are adopted in the enterprise to improve the enterprise's performance	2	0,628
B14	MAP related to management reporting systems that are adopted in the enterprise for strategies	4	0,778
Internal	Internal	12	0,726
External	External	14	0,809

Muijs (2011: 221) argues that an acceptable co-efficient is 0.60 or higher. The most significant Cronbach's Alpha was 0.809 and this was based on the external factors influencing the adoption of MAPs; followed by 0.778 which was based on MAPs related to management reporting systems that are adopted in the enterprise for strategic reasons, and the last significant Cronbach's Alpha was 0.726, based the internal factors influencing the adoption of MAPs. Moreover, it can be seen that all the Cronbach's alpha scores derived from the sections, exceeded the norm of 0.60, therefore indicating a level of acceptance and consistent scoring in the study.

A factor analysis was adopted to test the validity and reliability of the research instrument by using the Kaiser-Meyer-Olkin (KMO) test. This was done to check whether there is a correlation amongst the individual items found under each section of the questionnaire. Factor analysis was only applied to the Likert scale items that contained certain components which could be divided into finer components.

This is explained below in the rotated component matrix. Therefore, it was significant to establish whether this study could use a factor analysis with the given data set. The KMO results discussed below relate to Sections B and C of the research questionnaire that consisted of Likert scale items:

Section B: KMO test on MAPs currently used by manufacturing SMEs in the Durban area

Table 4.3: KMO test on MAPs currently used by manufacturing SMEs in the Durban area

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,777
Bartlett's Test of Sphericity	Approx. Chi-Square	1087,793
	df	210
	Sig.	0,000

Section C: KMO related to Internal and external factors influencing the adoption of MAPs:

Internal factors

Table 4.4: KMO test on internal factors influencing the adoption of MAPs by manufacturing SMEs

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,783
Bartlett's Test of Sphericity	Approx. Chi-Square	851,103
	df	66
	Sig.	0,000

External factors

Table 4.5: KMO test on external factors influencing the adoption of MAPs by manufacturing SMEs

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,745
Bartlett's Test of Sphericity	Approx. Chi-Square	1441,028
	df	91
	Sig.	0,000

As shown in tables 4.3-4.5 above, the values of the KMO's were greater than 0.500 and the Bartlett's Test of Sphericity sig. values were less than 0.500. This indicates that factor analysis was suitable for the study.

4.7 SUMMARY

Based on the empirical findings of this study, it was evident that manufacturing SMEs in the Durban area understand the significance of adopting both traditional and contemporary MAPs in their business operations. They appreciate that their use provides for a substantial measure of control in allocating scarce resources, optimising resource allocation, and adopting pricing strategies and management reporting systems for improving business performance. The findings indicated that ABC, operational budgeting, cost behaviour decisions, marginal costing and customer profitability were all adopted to a significant extent by manufacturing SMEs in the Durban area.

At the same time, the findings revealed the numerous challenges that faced them in adopting the types of MAPs that were needed to enhance their business operations. These challenges included both internal and external factors, with level of skills, the nature of the firm's structure, managerial experience, changes in firm size, challenges in gaining a competitive edge, ICT adoption, market innovation and networking as the most significant factors that influenced the adoption of MAPs by manufacturing SMEs. Although the findings were conclusive in many aspects, respondents also had contrasting views, more especially on issues such as Government incubators, government subsidies and other supporting agencies, and whether staff training and post training influences the MAPs adopted.

In most cases the findings of the study were consistent with those found in the literature, while, in some cases, new perspectives on factors affecting the adoption of MAPs by manufacturing SMEs emerged.

The following chapter provides conclusions and recommendations concerning the adoption of MAPs by manufacturing SMEs.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter presented the results, discussed the findings and drew comparisons between these and findings noted in the literature review. This chapter demonstrates how the aim and objectives of the study were met. The chapter further provides conclusions, makes recommendations, and explains the limitations of the study along with making suggestions for future research.

5.2 OVERVIEW OF THE STUDY

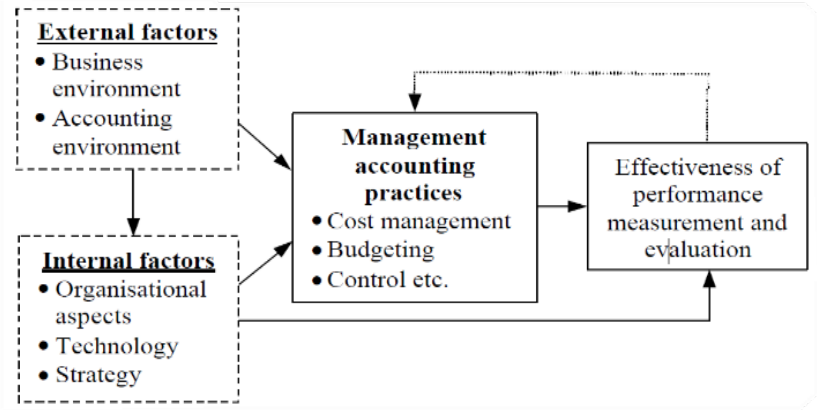
The primary aim of the study involved exploring the factors which influence the adoption of MAPs by SMEs operating in the manufacturing sector in Durban, and suggesting guidelines to facilitate the adoption of MAPs by those enterprises.

To meet the aim the researcher formulated the following objectives:

- To determine the current practices used by SMEs in the manufacturing sector in Durban;
- To examine internal and external factors affecting the adoption of MAPs by SMEs in the manufacturing sector in Durban; and
- To suggest guidelines for the adoption of MAPs by SMEs in the manufacturing sector in Durban.

Chapter Two provided literature-based evidence on the current contribution made by manufacturing SMEs to the economy. It also looked at the current challenges faced by these enterprises and, most importantly, the chapter investigated the adoption of MAPs amongst manufacturing SMEs and compared this with evidence from national and international literature. It was evident that a significant gap still exists in management accounting research regarding the adoption of MAPs by SMEs globally (Nandan 2010: 64; Lavia-Lopez and Hiebl 2015: 81; Msomi *et al.* 2019: 2). Moreover, many studies have focused primarily on the challenges faced by SMEs, the relevance of MAPs in business performance and the use of ICT in manufacturing SMEs, but there was less emphasis placed on what could have been the cause or influential factors that contributed to manufacturing SMEs adopting certain types, or any type, of MAPs in their enterprises. The literature shows that the majority of studies have adopted contingency-based theory in management accounting research as the basis for examining factors that influence the adoption of MAPs within the manufacturing SMEs context (Ismail and King 2014: 5; Ahmad 2014: 238; Taylor and Taylor 2007: 849). This theoretical framework accepts that there is no single or common MAP that can be generalised for all organisations. Since enterprises have different business objectives and diverse characteristics, it is essential that enterprises only incorporate the appropriate MAPs which will assist them in meeting the particular objectives of their own businesses. Therefore, it was going to be worthwhile for the study to explore the particular critical factors influencing the adoption of MAPs by manufacturing SMEs around the Durban area. Contingency-based theory, when applied to the findings of this study, can provide findings and recommendations which will assist in reducing the existing gap in management accounting research into manufacturing SMEs.

Figure 5.1: Contingency Theory



Source: Haldma and Laats (2002)

The contingency theory outlined by Haldma and Laats (2002: 381) indicates that there are various factors influencing the adoption of MAPs amongst enterprises. This study applied a contingency theoretical framework as a guideline to identifying the various internal and external factors that have an influence on the adoption of MAPs amongst manufacturing SMEs. After consulting current and earlier literature, the researcher was able to identify various additional internal and external factors beyond the factors found in the theoretical framework illustrated above, and these have been reflected in the empirical findings of the study.

5.3 ACHIEVEMENT OF THE OBJECTIVES OF THE STUDY

This section discusses how the aim and objectives of the study were achieved based on the supporting literature and the empirical findings of the study.

5.3.1 Objective 1: To determine the current practices used by SMEs in the manufacturing sector in Durban

This objective was formulated firstly to identify the current practices adopted by manufacturing SMEs around the Durban area and, secondly, to identify their adoption rate of both traditional and contemporary MAPs and, lastly, to test the respondents' understanding of the purpose of these MAPs for meeting their business objectives. In attaining this objective, the following variables are discussed in conjunction with the findings of the study:

5.3.1.1 Cost accounting systems adopted to control expenditure

As explained in the literature review, CAS is a framework used by organisations to evaluate the cost of their products for profitability analysis, inventory valuation and cost controls (Armitage *et al.* 2016: 36). Furthermore, traditional and contemporary CAS are identified as techniques designed to improve business performance, growth and sustainability for manufacturing SMEs (Amir *et al.* 2017: 269). The results shown in Chapter Four reflect that most manufacturing SMEs in Durban adopted ABC and TC. However, the findings also revealed that SC, MC and AC did not show significant results as a means of controlling expenditure compared to CAS. These findings agree with those of Brandt *et al.* (2017: 8) who also found that MC and other traditional MAPs were not often adopted by manufacturing SMEs. However, the results of the study concur with those of Gylling *et al.* (2015: 94) that ABC is adopted by manufacturing SMEs. This means that manufacturing SMEs in Durban do not rely solely on contemporary or sophisticated MAPs but also recognise the importance of traditional MAPs for controlling expenditure.

5.3.1.2 Planning systems adopted to organise resources efficiently and effectively

The empirical findings showed that a significant number of manufacturing SMEs in the Durban area adopt OB, FB and CB in order to organise their enterprises' resources as revealed in figures: 4.14, 4.15 and 4.17. These findings contradict Fatoki (2014: 155) who found that South African SMEs have little or no budgeting knowledge, whereas the findings of this study show that budgeting is very widely adopted by manufacturing SMEs. This shows that manufacturing SMEs frequently assess their finances, compare their forecasts of business performance with the actual business performance, and plan their investment opportunities by adopting OB, FB and CB systems. Additionally, it can be noted that in order for manufacturing SMEs to operate in this dynamic business environment, proper planning of resources should be ensured by adopting OB, FB and CB to meet business objectives and also to control finances. Similarly, to curb the high failure rate associated with manufacturing SMEs, budgeting should be embedded in the business activities.

5.3.1.3 Decision support systems adopted to optimise resource allocations

Decision Support Systems, along with the use of technology, was identified in the literature as an important tool widely used to assist management in sourcing relevant information, in order to optimise the allocation of their resources. The findings of this study revealed that CB, CVP and FA were widely adopted by owners/managers/other decision makers in the decision-making process. These findings concur with Bhattacharya *et al.* (2014: 704) in concluding that DSS are applied by manufacturing SMEs for sourcing information. However, the results are at odds with the findings of Taticchi *et al.* (2015: 6477) whose study indicated that, due to their complex structure, only large organisations can adopt DSS adequately. This means that more research needs to be done on smaller enterprises regarding this management tool.

Regardless of the recognition given to large organisations for incorporating DSS, it appears that manufacturing SMEs would benefit from shifting towards adopting this type of MAP to enhance their decision making processes and to secure their sustainability.

5.3.1.4 Pricing policy adopted to improve an enterprise's performance

The findings of this study showed that MC (78.0%) and FC (60.7%) were considered very relevant in costing or pricing policy for most manufacturing SMEs around the Durban area. The findings concluded that both the traditional and contemporary MAPs are still regarded as relevant and are used by manufacturing SMEs to meet the objective of optimising profits. This shows how these firms implement different pricing strategies in order gain a competitive edge and to keep their market share in the industry.

5.3.1.5 Management reporting systems adopted for strategies

When making decisions it is imperative that managers can access accurate, complete and timely information. The findings of this study indicated that most manufacturing SMEs adopted CP, PP and BSC as management reporting strategies. This indicates that these enterprises appreciate the significance of MRS and that emphasis is placed on proper preparation of reports and financials by either the manufacturing SME owners/managers/other decision makers and in some instances the professional practitioners.

In concluding the first objective, the study was able to identify the MAPs that are currently adopted by manufacturing SMEs around the Durban area and to construct arguments by comparing the literature with the findings of the study. It is evident that both traditional and contemporary MAPs are still seen as relevant despite the arguments raised in the literature that traditional MAPs are outdated and have been declared irrelevant.

It appears that traditional MAPs are still seen as important for executing costing systems, planning, support systems, pricing strategies and management reporting systems, while the value of contemporary MAPs has also been recognised by manufacturing SMEs as an additional strategic component or tool that allows enterprises to formulate tactics that enable them to have a competitive edge.

5.3.2 Objective 2: To examine internal and external factors affecting the adoption of MAPs by SMEs in the manufacturing sector in Durban

To meet this objective, both internal and external factors affecting the adoption of MAPs were scrutinized extensively from a literature perspective, and were further examined with the purpose of establishing the current challenges inhibiting the adoption of MAPs by manufacturing SMEs in the Durban area.

5.3.2.1 Internal factors

The following factors were found to be significant, based on the responses gathered from the findings of the study. There were 12 questions related to internal factors and the most influential factors identified in the previous chapter are discussed below:

- **Skills of an owner/ manager**

Rickards and Ritsert (2018: 28) highlighted that the skills possessed by SME owners significantly influence the adoption of MAPs. Similarly, the findings of this study indicate that about 84.0% of the respondents viewed skills as an important factor in an enterprise's adoption of MAPs. This means that manufacturing SME owners/managers/other decision makers rely a lot on their own skills in order to decide whether to adopt MAPs and to decide which ones are the most suitable.

The findings further reflect that owners/managers and other decision makers implement MAPs in order to save time, to make the best use of their scarce resources, to become more cost effective, and to maintain market share.

Eniola and Entebang (2016: 32) pointed out that most SMEs face obstacles to growth and sustainability on account of a lack of skills possessed by the owners/manager/decision makers. However this study challenges those findings. It appears that business owners/managers do use their skills to assist them in determining on the most sophisticated MAPs that need to be adopted within their business operations. Consequently, this study suggests that the skills possessed by manufacturing SME owners/managers/other decision makers are sufficient to enable the adoption of MAPs ensuring business growth and sustainability.

- **Firm structure**

About 78.7% of the respondents indicated that a firm's structure has an effect on the adoption of MAPs and this shows that a majority of manufacturing SMEs in Durban are carefully considering the complexity of their enterprise structures when deciding on the type of MAPs that need to be adopted. Otley (2016: 46) explains contingency-based theory and emphasises that each enterprise needs to assess its own structure when adopting MAPs, and must also ensure that the MAPs chosen are fit for purpose. This is in line with the findings of Otley (2016: 46) who found that a significant number of respondents indicated that a firm's structure has a significant influence on the adoption of MAPs. Therefore, the findings of this study confirm that a company's structure has an influence on the adoption of MAPs.

- **Experience**

In the context of the growing challenge facing manufacturing SMEs, which often cease to exist after their start-up phase, it has been shown that the level of experience held by the owners/managers/other decision makers has an impact on the firms' performance, growth and survival (Blair and Marcum, 2015: 249). Again, according to the findings of this study, about 77.3% of the respondents believe that the level of experience possessed by manufacturing SME owner/manager/other decision maker has an influence on the adoption of MAPs. This means that most manufacturing SME managers are influenced by their experience when adopting MAPs to meet their business objectives. The level of experience acquired could therefore assist in alleviating the existing failure rate amongst SMEs. Therefore, the level of experience possessed by the manufacturing SME owners/managers/decision makers appears to be an essential element that allows a smooth integration of MAPs into the business. This study therefore does conclude that the level of experienced possessed by manufacturing SME owners/managers/other decision makers plays an important role in the adoption of MAPs.

- **Changes in firm size**

The findings of this study indicated that 71.0% of the respondents regarded changes in the size of a firm as significant for the adoption of MAPs. Most manufacturing SMEs around the Durban area are therefore in agreement that the adoption of MAPs needs to support and cater for any structural changes that might take place in the enterprise. This is in line with the findings of Ahmad and Mohamed Zabri (2015: 765) who concluded that any structural changes in firm size automatically affects the MAPs adopted and that careful consideration needs to be exercised in order to accommodate the changes caused by alterations in firm size.

- **Size**

An indicated in the literature, and confirmed by the empirical study, the size of a firm also has an influence of the business's performance and functions. One of the critical components of contingency-based theory classifies the size of a firm as a factor and also adds that it has a significant influence on the adoption of MAPs (as indicated in the literature review). Similarly, the findings of this study support the theory as 64.7% of the respondents indicated that a firm's size affects the type of MAPs adopted. This means that most manufacturing SMEs take into consideration the size of their enterprise in order to implement the appropriate MAPs. Thus manufacturing SMEs need to consider the size of their business prior to choosing the MAPs which will be most appropriate to fulfil their business needs.

The empirical findings provided evidence that the owners'/managers'/other decision makers' level of education, the availability of resources, and staff training and post training, along with availability of time, and enterprise strategies while significant, were not identified as the most influential factors for their adoption of MAPs. This was indicated by the average (54.7%) response rate for these statements. Conversely, other factors such as skills, structure of the firm, level of experience and the size of a firm *were* identified as critical factors that influencing decision makers to adopt MAPs – these factors recording a more than 70% agree/strongly agree response rate. Therefore, even though education and other factors have been identified as influential in other studies, they weighed less with the respondents of this study.

5.3.2.2 External factors

The following factors were identified as having the most impact on the adoption of MAPs by manufacturing SMEs around the Durban area:

- **Competition**

Figure 4.47 (in Chapter 4) indicates that 84.0% of manufacturing SMEs around the Durban area supported the idea that competition significantly influences the adoption of MAPs in their enterprises. This implies that manufacturing SMEs need to keep up with the latest technological advances. As the 'Fourth Industrial Revolution' escalates market challenges for the enterprises in this sector, they will have to come up with more strategic avenues enabling them to develop product innovations, diversification and added value with the use of technology (Ocloo *et al.* 2018: 127).

- **Market innovations**

The findings of the study revealed that 77.0% of the respondents agreed that market innovations had an influence on the adoption of MAPs in their enterprises. This is in line with the conclusion reached by Azudin and Mansor (2018: 223) that market innovation influences the adoption of MAPs and also significantly assists management to optimise business performance. On the other hand, Ahmad and Mohamed Zabri (2015: 763) found that there is limited knowledge emerging from management accounting research related to market innovation as a strategic approach linked to the adoption of newer MAPs by SMEs. However, many scholars, government departments and supporting agencies have recognised innovation as being an essential element in economic growth and an important mechanism for sustaining businesses. Overall therefore this study agrees with the study conducted by Ngibe and Lekhanya (2019a: 15) that radical technical innovations imposed by manufacturing SMEs will enable them to instigate innovations that can support sustainable growth.

- **Market success**

71.0% of the respondents indicated that the adoption of MAPs in their enterprises influenced their success in the market. These findings indicate that market success for manufacturing SMEs is understood to depend on the MAPs adopted to promote planning and control and to enhance sound decision making. These findings support those of Johnson (2015: 272) who found that the adoption of MAPs by SMEs does improve their business performance and sustainability. This also indicates that the application of MAPs can enhance their competitive edge amongst manufacturing SMEs and that it will promote innovative strategies that allow for radical transformation.

- **Networking with other enterprises**

One of the core responsibilities of an owner/manager/decision maker is to establish and maintain good working relationships with others (including both internal and external parties). This can help to optimise business performance according to Sefiani, Davies, Bown and Kite (2018: 21). Networking with other enterprises was identified as an important element for sharing knowledge regarding the adoption of MAPs and also for allowing owners/managers/other decision makers to upgrade to more sophisticated or compatible MAPs. The findings of this study also agree with these conclusions as close to 70.0% of the respondents indicated that networking with others in their sector influenced the adoption of MAPs. This indicates that the owners /mangers understand the importance of sharing knowledge regarding the adopted MAPs with others in their sector.

The findings also indicated that in order for manufacturing SMEs to be able to survive in this rapidly changing environment, networking can provide owners/managers/other decision makers with the necessary strategies that can assist businesses to develop and become sustainable.

- **Technology**

With the technological ‘industrial revolution’, continuous technological advances are being introduced, and these changes require more refined MAP software which are more cost effective and ensure that more accurate information is generated for decision making purposes. The use of technology by manufacturing SME owners/managers/other decision makers was identified as an influential factor by 63.0% of the respondents as providing better information. These findings are supported by those of Pillay (2016: 1) and of Bharati and Chaudhury (2015: 91) who found that a firm’s competitive edge can be reinforced by the effective use of technology and that technology is an essential tool in promoting product innovation. These findings indicate that manufacturing SMEs should continuously upgrade to the latest technologies compatible with the more sophisticated MAPs that can accelerate product innovation.

While prior literature indicated that external factors such as an uncertain environment, climate change, changes in the economy, the influence of government and other supporting agencies, and political influences were all regarded as influential for manufacturing SMEs adopting certain MAPs, the findings of this study disagreed shedding new light on the opinions of the respondents concerning external factors. This is illustrated in Figures 4.13.1-4.13.8 where fewer than half of the respondents supported the idea that those factors were significant for the adoption of MAPs within their enterprises.

5.4 RECOMMENDATIONS FOR SMEs

The following recommendations were derived from a careful consideration of the findings and conclusions of this study:

- It is recommended that the owners/managers/other decision making stakeholders should incorporate both traditional and contemporary MAPs in their enterprises in order to effectively and efficiently plan, organise and control their business operations. However, more contemporary MAPs should be adopted as they are designed to improve strategies and business performance that will sustain these enterprises.

- The level of education was not regarded as significant by the respondents of this study, implying that business owners/managers/ other decision making stakeholders rarely relied on their education to adopt MAPs in their business operations. However, the study recommends that the business owner/managers should consider engaging in learning programmes that will teach them the fundamentals of MAPs so that they can enhance their understanding and fully optimise their capacity.

- This study recommends that business owners/managers/other relevant stakeholders should place more emphasis on developing or acquiring new knowledge dealing with MAP adoption particularly by those individuals who currently have little or no knowledge of traditional and contemporary MAPs.

- In order to remain relevant in this changing business environment, a constant upgrading of skills is recommended for manufacturing SME owners/managers/ other decision making stakeholders in order for them to gain more knowledge and experience in adapting to contemporary MAPs.

- Regarding the availability of resources for training, it is recommended that manufacturing SMEs invest more time and resources which can be sourced from supporting agencies who can provide training to staff so that they can effectively integrate the adoption of MAPs into their business operations. Regular follow-ups should be carried out by the owner/managers in order to identify any gaps that still require improvement in the adoption of MAP usage by staff. This will ensure that all staff are properly trained and have a better understanding of the different MAPs available for the specific functions of the enterprise.

- The findings also showed that the age of the firm was not regarded as a significant factor for this study and it is therefore recommended that manufacturing SMEs should start adopting MAPs in their operations as early as possible in order for them to be sustainable and grow towards maturity. The integration of MAPs at the inception phase not only strengthens the internal processes of an enterprise but also enhances business performance allowing transition of the business life cycle.

- The findings of this study indicated that manufacturing SMEs in the Durban area are not using government interventions and other supporting agencies which could be one of the causes of the high business failure rate in the area. The study recommends therefore that business owner/managers must register with government databases so that they can utilise the various support avenues that government provides. These support avenues may include, but are not limited to, assistance with finance, training, mentorship, market access, technical support, networking and other facilities.

- The study recommends that manufacturing SMEs should assess their inherent business risk so that they can pinpoint exactly which MAPs can be implemented to curb that risk and enable them to sustain their business activities.

- With regards to climate change, many manufacturing SMEs are affected by environmental issues that have an impact on their production processes. Therefore, the study recommends that sophisticated or environmental MAPs should be incorporated in order to become more economical, to ensure greener production, and safe, innovative and sustainable growth through enhanced share value.

5.5 LIMITATIONS

This study focused on the manufacturing SMEs located in the Durban area and hence the findings revealed in this study were based on the views expressed by the respondents whose businesses were located in that area. In addition, the researcher met with difficulties during the data collection process, as some of the participants were not fully committed to returning the completed questionnaires timeously. Therefore, the findings can only be generalised with caution to other manufacturing SMEs in other regions, with other demographics, since their characteristics may differ.

5.6 RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the findings of the study, the following possible future research areas have been identified:

- The study only focused on manufacturing SMEs and did not focus on the other sectors within the sphere of SMEs. Therefore, it is recommended that future studies consider other sectors within the SME sphere and investigate the adoption of MAPs amongst those enterprises.

- The findings of this study showed that traditional MAPs are still regarded as relevant and are adopted by many manufacturing SMEs despite the rapidly changing environment. This implies that a comparable study should be conducted to investigate the relevance of traditional MAPs to the business performance achieved in other sectors.

- Since the study focused on the factors influencing the *adoption* of MAPs and did not investigate the implications for their *future* growth and sustainability, it is recommended that a study be conducted to investigate the impact of the MAPs adopted by manufacturing SMEs for their business performance, growth and sustainability.

- The study applied a quantitative research method. Therefore, it is proposed that another study could apply a mixed method approach in order to gather a broader spectrum to expand the body of knowledge in this field.

- The study indicated the current use of both traditional and contemporary MAPs amongst manufacturing SMEs. However, as contemporary MAPs are seen as management tools with special functions which facilitate enhanced business strategies, it is suggested that the use of contemporary MAPs specifically, for sustaining manufacturing SMEs, be investigated.

5.7 CONCLUSION

Ideally all business owners/managers/decision makers have a common objective, which is to maximise profits and increase stakeholders' value while assuring the sustainable growth of the business. This means that these stakeholders need to adopt the most relevant MAPs with the most appropriate functions for improving and maintaining their business performance. To remain relevant and constantly upgrade their manufacturing processes in the present ever-changing environment it is important that they incorporate contemporary MAPs within their business strategies. This will help to enhance their business performance, strengthen their competitive edge and improve their market value, allowing the business' stakeholders to formulate better strategies for ensuring sustainable growth and thus helping to reduce the currently unacceptably high business failure rate amongst these entities.

This chapter re-enforced the aim and objectives of the study by providing evidence on how these were met. The recommendations provided were based on the findings and adhered to the objectives of the study. The limitations encountered in the study were also discussed, together with suggestions for possible future research.

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APPENDICES

APPENDIX A: LETTER OF INFORMATION

LETTER OF INFORMATION

Title of the Research Study: Factors influencing the adoption of Management Accounting Practices (MAPs) by Small and Medium Enterprises (SMEs) in the manufacturing sector in Durban.

Principal Investigator/s/researcher: Mbali Portia Msomi, BTech: Cost and Management Accounting

Co-Investigator/s/supervisor/s: Dr C.J Nyide, DBA; Mr M Ngibe, MTECH: CA

Brief Introduction and Purpose of the Study: The study will explore factors influencing the adoption of Management Accounting Practices (MAPs) by Small and Medium Enterprises (SMEs) in the manufacturing sector located in Durban; and suggest guidelines that will endeavours to facilitate the adoption of MAPs by SMEs in the manufacturing sector. The research will determine the MAPs used by SMEs in the manufacturing sector in Durban, examine the internal factors as well as external factors affecting the adoption of MAPs by SMEs in the manufacturing sector in Durban, and suggest guidelines that will endeavours to facilitate the adoption of MAPs by SMEs in the manufacturing sector.

Outline of the Procedures: You will be responsible for completing a survey questionnaire or interview which will be handed out personally by the researcher to you as the small

business owner or suitable representative of the business owner. The estimated time taken to complete the questionnaire is 20 minutes.

Risks or Discomforts to the Participant:

There are no risks or discomforts to you.

Benefits:

Sophisticated MAPs may be identified and adopted by manufacturing SMEs in order to enhance their practices, sustainability and growth as a result of the findings and recommendations of the study.

Reason/s why the Participant May Be Withdrawn from the Study:

There will be no adverse consequences for the participants should they choose to withdraw from the study.

Remuneration:

You will not receive any remuneration for participating in the study.

Costs of the Study:

You will not be expected to cover any costs towards the study.

Confidentiality:

All information released would remain confidential. The information will not be used for any other purpose other than this research study. There will be no business names mentioned in the write up of the dissertation.

Research-related Injury:

There will not be any compensation for any research related injury because it is very unlikely that there will be any injury occurred while answering of the questionnaire.

Persons to Contact in the Event of Any Problems or Queries:

Please contact me on 074 623 4189, my supervisor Dr. C. Nyide on 033 8458882, Co-supervisor Mr M Ngibe on 031 373 5858 or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031 373 2577 or moyos@dut.ac.za

General:

Potential participants must be assured that participation is voluntary and the approximate number of participants to be included should be disclosed. A copy of the information letter should be issued to participants. The information letter and consent form must be translated and provided in the primary spoken language of the research population e.g. isiZulu.

APPENDIX B: CONSENT FORM

CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, **MBALI PORTIA MSOMI** of about the nature, conduct, benefits and risks of this study.
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

I, herewith confirm that I have been informed fully about the nature, conduct and risks of the above study.

_____ _____

Participant signature **Date**

APPENDIX C: COVERING LETTER AND QUESTIONNAIRE

Dear participant

I am currently enrolled for a Master's Degree in Accounting at the Durban University of Technology, Department of Management Accounting. My research topic is **"Factors influencing the adoption of Management Accounting Practices (MAP) by Small and Medium Enterprises (SMEs) in the manufacturing sector in Durban"**. The aim of this study is to explore factors influencing the adoption of MAPs by SMEs in the manufacturing sector located in Durban; and suggest guidelines that will endeavours to facilitate the adoption of MAPs by SMEs in the manufacturing sector.

Your participation to this study will be highly appreciated, as it will enable the researcher to make recommendations that will help manufacturing SMEs in adopting MAPs that are influential to the practices, sustainability and growth of manufacturing SMEs in South Africa. Please make sure that you fully complete the questionnaire as incomplete questionnaires will be disregarded for analysis purposes. Please note that your identity and individual answers will be kept totally confidential. Should you wish to discuss this further, please feel free to contact me or my supervisor Dr C.J. Nyide at nyidec@dut.ac.za and co-supervisor Mr M. Ngibe at musawenkosin1@dut.ac.za

Your participation will be appreciated. Thank you.

_____

Miss Mbali Portia Msomi

Cell No.: 074 624 189

Fax No.: 031 373 5226
mbalim@dut.ac.za

Questionnaire

The purpose of this study is to explore factors influencing the adoption of MAPs by SMEs in the manufacturing sector located in Durban; and suggest guidelines that will endeavour to facilitate the adoption of MAPs by SMEs in the manufacturing sector.

Definition of management accounting practices

- *Management accounting practices (MAPs) are sets of techniques aimed at providing managers with financial as well as non-financial information to help them make decisions and maintain effective control over business resources. They include, but are not limited to, the following: costing systems, budgeting systems, decision support systems, pricing policy and Management Reporting Systems. For the purposes of this study only the MAPs defined below will be used.*

Definitions of management accounting practices

- **Costing systems**
  This is a framework used by firms to estimate the cost of their products for profitability analysis, inventory valuation and cost control. Examples are absorption costing; activity based costing and variable costing.
- **Budgeting systems**
  These are budgets used for planning future performance, planning the future financial position, and controlling cost. Examples are flexible, incremental of zero-based budgets.
- **Decision support system**
  This is the collection, storage and processing of financial and accounting data used by internal users to report information to investors.
- **Pricing Policy**
  This includes relationship analysis between pricing, customer value, competitiveness and profitability; particularly the need for a market-led approach to price setting. Example of a contribution-based costing system
- **Management Reporting Systems**
  This is the provision and analysis of financial information on the firm's product markets and competitors' cost and cost structures.

This study will also focus on Traditional Management Accounting (TMA) versus Contemporary Management Accounting (CMA) which can be defined as follows:

Traditional Management Accounting Practices (TMAP): Include but are not limited to practices such as budgeting, costing and profitability analysis mostly focusing on the internal issues of the organization and are financially oriented.

Contemporary Management Accounting Practices (CMAP): Includes both financial and non-financial information in a more strategic manner, these can include but not limited to: competitor cost assessment, life cycle costing, strategic pricing etc.

RESEARCH QUESTIONNAIRE

SECTIONA – BIOGRAPHICAL DETAILS OF THE RESPONDENT

Please only cross-out one answer (X)

1. Please indicate the role you play in the business

Owner	Managers (*if they are different from owners*)	Senior staff
1	2	3

2. Please select your gender

Male	Female
1	2

3. Please select your race

Black	Coloured	Indian	White	Other, please specify
1	2	3	4	5

4. Please indicate your age group

0 –18	18 – 25	26 – 33	34 – 41	42 – 49	50 or over
1	2	3	4	5	6

5. Please indicate the number of years in the business

0 – 3 years	4 – 7 years	8– 11 years	12 years or more
1	2	3	4

6. Indicate the type of business

Small enterprise (*5 – 49 employees*)	Medium enterprise (*50 – 250 employees*)
1	2

7. How would you categorize your occupation or position? (Please cross only one)

Owner	Manager	Both (owner-manager)	Other (Please specify)
1	2	3	4

8. Please indicate your highest level of education

Certificate	Matric	Diploma	Honour's Degree	Master's Degree	PhD Degree	Other, please specify
1	2	3	4	5	6	7

9. What is the enterprise annual turnover?

Less than R200 000	R200 001-R1 000 000	R1 000 001-R3 000 000	R3 000 001-R6 000 000	R6 000 001-13 000 000	R13 000 001 and above
1	2	3	4	5	6

SECTION B – Management Accounting Practices (MAPs) used by Small and Medium Enterprises (SMEs) - Traditional Management Accounting Practices (TMAP) vs Contemporary Management Accounting Practices (CMAP)

Please answer the following questions from 10 to 40 by placing a cross (X) to reflect your level of agreement to the statements.

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
10. The following cost accounting systems are adopted in the enterprise in order to control expenditures					
10.1 Standard costing	1	2	3	4	5
10.2 Marginal costing	1	2	3	4	5
10.3 Absorption costing	1	2	3	4	5
10.4 Target costing	1	2	3	4	5
10.5 Activity-based costing	1	2	3	4	5
11. The following MAPs are related to Planning/Budgeting/Control system are adopted in the enterprise to efficiently and effectively organise the resources					
11.1 Operational budget	1	2	3	4	5
11.2 Flexible budget	1	2	3	4	5
11.3 Capital budget	1	2	3	4	5
11.4 Incremental budget	1	2	3	4	5
11.5 Zero- based budget	1	2	3	4	5
12 The following decision support systems are adopted in the enterprise to optimise the resource allocations					
12.1 Cost behaviour	1	2	3	4	5
12.2 Cost volume profit analysis	1	2	3	4	5
12.3 Investment analysis	1	2	3	4	5
12.4 Financial analysis	1	2	3	4	5
13 The following MAPs relating to pricing policy are adopted in the enterprise to improve the enterprise's performance					
13.1 Marginal costing	1	2	3	4	5
13.2 Full cost plus	1	2	3	4	5
13.3 Return on investment	1	2	3	4	5

14 MAP related to management reporting systems are adopted in the enterprise for strategies					
14.1 Segment reporting	1	2	3	4	5
14.2 Balance score card	1	2	3	4	5
14.3 Product profitability	1	2	3	4	5
14.4 Customer profitability	1	2	3	4	5

SECTION C – Internal and External factors influencing the adoption of MAPs

	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
INTERNAL FACTORS					
15 The education level of the SME owner/manager is relevant for the adoption of MAPs	1	2	3	4	5
16 My skills as an owner/manager allow me to adopt MAPs in the operations of the business	1	2	3	4	5
17 My experience as an SME owner/manager is enough to successfully adopt the appropriate MAPs in this enterprise	1	2	3	4	5
18 Resources such as funds and time are available to allow training of staff in order to successfully adopt to MAPs in this business	1	2	3	4	5
19 Training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in this business.	1	2	3	4	5
20 The post training of owner/manager and staff improves the use of MAPs by the business.	1	2	3	4	5
21 The availability of time and money hinder the ability to offer proper training needs in order to adopt appropriate MAPs in this business.	1	2	3	4	5
22 The age of the enterprise influences the adoption of MAPs	1	2	3	4	5
23 The enterprise's strategy influences the adoption of MAPs	1	2	3	4	5
24 The firm size has an impact on the adoption of MAPs	1	2	3	4	5
25 The change in firm size had an impact on the adoption of MAPs	1	2	3	4	5

26 The enterprise structure has an influence in the types of MAP applied in the enterprise	1	2	3	4	5
	Strongly Disagree 1	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
EXTERNAL FACTORS					
27 The uncertain environment in which the enterprise is operating under has an influence in the type of MAPs adopted	1	2	3	4	5
28 The business uses a management accountant or an accounting practitioner to deal with MAPs	1	2	3	4	5
29 The impact of environmental changes has an influence on the MAPs adopted in the enterprise	1	2	3	4	5
30 The inflation of the economy had an influence in the MAPs utilised by the enterprise	1	2	3	4	5
31 Government interventions through incubations have an influence on the adoption of MAPs	1	2	3	4	5
32 Government subsidies (funds) assist in improving capacity for the adoption of MAPs	1	2	3	4	5
33 Supporting agencies have an impact on MAP adopted in the enterprise	1	2	3	4	5
34 Political and social changes has an effect on the adoption of MAPs	1	2	3	4	5
35 Networking with other enterprises has an effect on the MAPs applied	1	2	3	4	5
36 The use of technology plays a huge role in the type of MAPs utilised by this enterprise	1	2	3	4	5
37 The use of technology improves the use of MAPs by this business	1	2	3	4	5
38 The competition has an impact on the MAPs adopted by the enterprise	1	2	3	4	5
39 The MAPs adopted by the enterprise have an influence on the success of the business in the market	1	2	3	4	5
40 Market innovations have an impact on the MAPs adopted by the enterprise	1	2	3	4	5

**********THE END **********

Thank you for your support and participation

APPENDIX D: ETHICAL CLEARANCE LETTER

Faculty Research Office
Durban University of Technology
13 August 2018

Ms M.P. Msomi
Student Number: **20703911**
Degree: Masters in Accounting (Management Accounting)
Email: mbalim@dut.ac.za

Dear Ms Msomi
ETHICAL APPROVAL: LEVEL 2

Your email correspondence in respect of the above refers.
I am pleased to inform you that the Faculty Research Committee (FRC) at its meeting on 24 April 2018, has granted preliminary permission for you to conduct your research "***The factors influencing the adoption of Management Accounting Practices (MAP's) by Small and Medium Enterprises (SME's) in the manufacturing sector is Durban***".

You are required to present this letter to the central DUT Research office to obtain full permission to conduct the research at DUT. Please also note that each of your questionnaires and interviews must be accompanied by a letter of information and a letter of consent for each participant, as per your research proposal.

A summary of your key research findings may be submitted to the FRC on completion of your studies.

Kindest regards.
Yours sincerely

Dr Delene Heukelman
Faculty Research Coordinator (Acting)

APPENDIX E: ADDITIONAL STATISTICS

	Chi-Square	df	Asymp. Sig.
Role you play in the business	38,88	2	0,000
Gender	0	1	1,000
Race	37,6	4	0,000
Age group	160,24	5	0,000
Number of years in the business	25,627	3	0,000
How would you categorize your occupation or position?	125,04	3	0,000
Highest level of education	62	5	0,000
What is the enterprise annual turnover?	30,16	5	0,000
Standard costing	138,933	4	0,000
Marginal costing	17,533	4	0,002
Absorption costing	80,667	4	0,000
Target costing	27,4	4	0,000
Activity-based costing	77,8	4	0,000
Operational budget	149,533	4	0,000
Flexible budget	58,533	4	0,000
Capital budget	23,533	4	0,000
Incremental budget	7,4	4	0,116
Zero- based budget	54,333	4	0,000
Cost behaviour	157,133	4	0,000
Cost volume profit analysis	148,667	4	0,000
Investment analysis	6,933	4	0,139
Financial analysis	4,867	4	0,301
Marginal costing	132,333	4	0,000
Full cost plus	42,467	4	0,000
Return on investment	12,533	4	0,014
Segment reporting	46,067	4	0,000
Balance score card	51,8	4	0,000
Product profitability	65,267	4	0,000
Customer profitability	106,6	4	0,000
The education level of the SME owner/manager is relevant for the adoption of MAPs	20,267	4	0,000
My skills as an owner/manager allow me to adopt MAPs in the operations of the business	122,467	4	0,000
My experience as an SME owner/manager is enough to successfully adopt the appropriate MAPs in this enterprise	112,733	4	0,000
Resources such as funds and time are available to allow training of staff in order to successfully adopt to MAPs in this business	45,133	4	0,000
Training of staff is frequently conducted in order to provide capacity for effective adoption of MAPs in this business.	47,267	4	0,000

The post training of owner/manager and staff improves the use of MAPs by the business.	18,867	4	0,001
The availability of time and money hinder the ability to offer proper training needs in order to adopt appropriate MAPs in this business.	36,467	4	0,000
The age of the enterprise influences the adoption of MAPs	52,067	4	0,000
The enterprise's strategy influences the adoption of MAPs	34,8	4	0,000
The firm size has an impact on the adoption of MAPs	82,733	4	0,000
The change in firm size had an impact on the adoption of MAPs	75,067	4	0,000
The enterprise structure has an influence in the types of MAP applied in the enterprise	109,333	4	0,000
The uncertain environment in which the enterprise is operating under has an influence in the type of MAPs adopted	12,2	4	0,016
The business uses a management accountant or an accounting practitioner to deal with MAPs	68,333	4	0,000
The impact of environmental changes has an influence on the MAPs adopted in the enterprise	8,6	4	0,072
The inflation of the economy had an influence in the MAPs utilised by the enterprise	2,2	4	0,699
Government interventions through incubations have an influence on the adoption of MAPs	3,933	4	0,415
Government subsidies (funds) assist in improving capacity for the adoption of MAPs	6,867	4	0,143
Supporting agencies have an impact on MAP adopted in the enterprise	1,933	4	0,748
Political and social changes has an effect on the adoption of MAPs	7,533	4	0,110
Networking with other enterprises has an effect on the MAPs applied	59,533	4	0,000
The use of technology plays a huge role in the type of MAPs utilised by this enterprise	50,333	4	0,000
The use of technology improves the use of MAPs by this business	37,667	4	0,000
The competition has an impact on the MAPs adopted by the enterprise	156,733	4	0,000
The MAPs adopted by the enterprise have an influence on the success of the business in the market	67,667	4	0,000
Market innovations have an impact on the MAPs adopted by the enterprise	136,333	4	0,000

APPENDIX F: LETTER FROM STATISTICIAN

DEEPAK SINGH

Database and Statistical Analysis

P. O. Box 24002 (cell): 083-775-9239

Hillary

TO WHOM IT MAY CONCERN

14 May 2020

Analysis of Data

This is to confirm that I assisted Ms Mbali Portia Msomi with the Quantitative analysis of her data.

Sincerely

Deepak Singh DUT
Panel of Statisticians

APPENDIX G: TURNITIN DOCUMENT

Skip to Main Content

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by Mbali Msomi

FILE	DISSERTATION_TURNIT.DOCX (2.94M)		
TIME SUBMITTED	09-MAY-2020 06:36PM (UTC+0200)	WORD COUNT	41625
SUBMISSION ID	1320356168	CHARACTER COUNT	228794

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ORIGINALITY REPORT

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PRIMARY SOURCES

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2	Submitted to Higher Education Commission Pakistan Student Paper	%1
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4	openscholar.dut.ac.za Internet Source	%1
5	Submitted to University of KwaZulu-Natal Student Paper	%1
6	Submitted to Durban University of Technology Student Paper	%1
7	ir.dut.ac.za Internet Source	%1
8	mafiadoc.com Internet Source	<%1

APPENDIX H: LETTER FROM PROFESSIONAL EDITOR

126 Sandown Village

27 Harvey Road

Pinetown

3610

05 July 2020

Proof of Editing

This is to confirm that the attached dissertation by Ms Mbali Msomi has been formally edited for language by Dr Jane Skinner, who is a qualified teacher of English with several years' experience in editing academic dissertations and theses.

Dr JP Skinner