



The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on selected manufacturing companies in KwaZulu-Natal.

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EDDELINE MAPOSA

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Supervisor: Professor M.S Bayat (PhD)

Date: **7 October 2021**

DECLARATION

I declare that the thesis herewith submitted for the Doctor of Philosophy in Management Sciences: Business Administration studies at the Durban University of Technology has not been previously submitted for a degree at any other university.

Eddeline Maposa

APPROVED FOR FINAL SUBMISSION

7 October 2021

Supervisor

Professor. M S Bayat (PhD)

Date

ABSTRACT

Both domestic and international markets are facing intense competition, customers have become more assertive, educated and demanding. Internationalisation of businesses, more advanced technology and easier payment, delivery and importation of goods globally have now placed immense pressure on manufacturing companies to become more innovative and to stay ahead of competition. However, a sustained competitive advantage is not only about strategic choice but also about appropriate performance measurement systems to support a firm's strategic priority. In the past, manufacturing companies have managed to evaluate operative, process-based performance effectively and efficiently. This, however, resulted in the strategic performance of a manufacturing company, be it a network or a single site, being seldomly monitored and evaluated since manufacturing managers are usually occupied with daily business operations while missing the importance of innovating strategic tools for a goal-oriented strategic development and evaluation. This study aimed to assess the performance measurement systems being used in KwaZulu-Natal manufacturing companies and evaluate to what extent these manufacturing enterprises use integrated performance measures in the form of SPMMSs, the extent of utilisation and perceived relevance related to their actual financial and non-financial results.

A survey was conducted to gather data. Quantitative techniques were employed for analysing the data. The relative importance of financial as well as non-financial measures in relation to the performance evaluation process in the context of manufacturing enterprises was investigated. The result of the analysis indicated that the majority of respondent enterprises in KwaZulu-Natal focus on very few non-financial measures and more financial measures, using historical data, accounting profits and financial ratios which are compared with industrial trends. Despite the fact that the non-financial measures are as important as the financial measures, little or no attention is being paid to non-financial dimensions. The result of the analysis revealed that there is a clear and strong relationship between the financial performance and the non-financial performance measures (customer satisfaction, internal process/operational, employee satisfaction and supplier performance). In

addition, empirical findings suggested that the non-financial measures are significant explanatory factors of financial performance. More importantly, findings show that manufacturing companies that consistently employed both financial and non-financial measures performed better than those that do not. These empirical findings and also findings from literature review revealed that there is no performance measurement system appropriate for manufacturing companies. This thesis therefore addressed this practical and scientific gap by developing a generic strategic performance measurement and management system (SPMMS) for manufacturing companies which enables practitioners to define and implement a company-specific SPMMS and monitor the strategic performance of their manufacturing network or sites. The balanced scorecard (BSC) was used as a reference model. Supporting findings for the successful design, development, implementation as well as the applicability of the developed SPMMS were validated with a detailed case study.

DEDICATION

After completing this thesis, I could not help but think about my late mother who is not going to be around to witness how she impacted on my life. She was the one who instilled in me the importance of education; I thank her and still remember her words of wisdom and encouragement. My mother was exceptional and this work bears testimony to her inspiration.

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LIST OF ABBREVIATIONS

ANC	-----	African National Congress
BSC	-----	Balanced Scorecard
CEO	-----	Chief Executive Officer
CFI	-----	Corporate Finance Institute
CRM	-----	Customer Relations Management
DTP	-----	Desktop Publication
EFQM	-----	European Foundation for Quality Management
FDI	-----	Foreign Direct Investment
GDP	-----	Gross Domestic Product
HR	-----	Human Resources
IT	-----	Information Technology
JIT	-----	Just In Time
KPA	-----	Key Performance Area
KPI	-----	Key Performance Indicator
KZN	-----	KwaZulu-Natal
NPC	-----	Natal Portland Cement
PIFSA	-----	Printing Industries Federation of South Africa
PM	-----	Performance Measurement
PMM	-----	Performance Measurement and Management

PMMS System	-----	Performance Measurement and Management
PMS	-----	Performance Measurement System
PNPI	-----	Printing, Newspaper and Packaging Industry
ROA	-----	Return on Assets
ROCE	-----	Return on Capital Employed
ROI	-----	Return on Investment
ROS	-----	Return on Sales
SCM	-----	Supply Chain Management
SMART	-----	Strategic Management and Report Technique
SONA	-----	State of the Nation Address
SPMS	-----	Strategic Performance Measurement System
SPMMS Management System	-----	Strategic Performance Measurement and
SRM	-----	Supplier Relations Management
TQM	-----	Total Quality Management

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

Manufactured products and their manufacturing processes have become more complex and intricate, while supply chains have also become increasingly sophisticated. This has resulted in companies battling to implement, evaluate and manage performance across their manufacturing sites and networks (Tangen, 2004:721).

In their book, Verweire and Van den Berghe (2004:7) cited that performance measurement and management process develop indicators that are measurable and can be tracked in a systematic pattern in order to evaluate if predetermined goals and objectives were achieved. According to these authors, the performance measurement and management process can be viewed as an integrative control system which can be used by organisations in the deployment of strategies and policies. This closed loop control system also assists managers in obtaining feedback from different levels and departments so that business performance is managed.

A performance measurement system was described by Taticchi, Cagnazzo, Beach and Barber (2012b:593-614) as being an important information system which is also a critical ingredient if performance management is to function effectively and efficiently. However, in order to monitor the degree of its strategic achievement and to put its strategy into action to achieve goals, a company needs to use a performance measurement system (PMS) that is also strategic and integrated (Micheli and Manzoni, 2010:465-476). These strategic performance measurement systems (SPMSs), as stated by Kaplan and Norton (2001), have the following three common characteristics:

- They all have financial measures to capture the impact of any decisions made by managers regarding cash flows, working capital, efficiency in capital utilisation and revenue growth;
- financial measures, such as the ones mentioned above, are supplemented with non-financial measures of performance in order to indicate the operational achievements which are likely to drive financial performance in the future; and
- SPMSs are designed to fulfill numerous purposes, which could vary from the simple determination of operating costs to more complex purposes like value creation, which places more emphasis on the execution of company strategy.

Since existing SPMSs have been designed for numerous and not specific purposes, they are not useful in manufacturing (Bititci, Garengo, Dorfler and Nudurupati, 2012:305-327).

Bititci, et al. (2012:305-327), in their research, posited that a gap existed between a company's strategic vision and how it manages its internal business processes. For this gap to be closed, this research study aims at providing manufacturing companies and the industry as a whole with a more integrated SPMMS which does not focus on traditional financial performance measurement only, but one that also focuses on non-financial performance measures of organisations, a type of SPMS that should also take a company from just having a vision to having action plans that can be broken down into measurable goals and objectives. This developed model will also be used to reveal the perceived associations between strategy, PMSs and the overall performance and effectiveness of an organisation. The developed SPMMS will test a) if an association exists between strategy and a company's extent of adoption of financial as well as non-financial performance measures; b) the relationship between the adoption of financial and non-financial performance measures with a firm's overall organisational performance; and c) if strategy could lead to organisational effectiveness through the integration of financial and non-financial measures.

A brief overview of the history of KwaZulu-Natal and its economy is given in Chapter One. Secondly, the relevance of the study to economic development and to manufacturing companies in particular will be highlighted. The aims and objectives of

the study are identified and stated while the chapter closes with a detailed structure of the research.

1.2 A brief overview of KwaZulu-Natal

As stated in an article by Responsible Travel in 2016, under the guidance of the Department of Tourism in KwaZulu-Natal, KwaZulu-Natal, commonly referred to as "the garden province", is one of the major provinces of South Africa. In 1994, the Zulu Bantustan of KwaZulu ("Place of the Zulu") and Natal Province were merged to create one big province of KZN. It shares borders with three countries, namely Mozambique, Swaziland and Lesotho. Pietermaritzburg is the capital of KZN, while the largest city is Durban. According to Responsible Travel, (2016), KZN is second to Gauteng in terms of population.

KwaZulu-Natal was cited by Rodseth (2016) as being the motherland of many prominent figures in the history of South Africa, like Pixley ka Isaka Seme, who founded the African National Congress and was also the first black lawyer in South Africa; Mangosuthu Buthelezi, who founded the Inkatha Freedom Party; and the former president of South Africa, Jacob Zuma.

Despite being the largest city of KZN, Durban is also growing rapidly economically, owing to it being amongst Africa's busiest ports. Durban also boasts one of the most efficient railway networks in Africa, linking it to most business sites of Southern Africa (The Provincial Review: 2016)

KZN's geographical position is strategic in that it is directly accessible to the Pacific and Indian oceans, which in turn assists by providing the country access to the world's trade routes and to the major global markets, such as the Americas, Europe, the East and the whole continent of Africa (Provincial Review, 2016)

KZN also boasts another large port, of Richards Bay, giving the province a strategic advantage in terms of its position. Other large manufacturing operations in Durban include Bayer in Newcastle, which produces chrome chemicals for both regional and international markets; the old Ingagane Power Station; now called the Newcastle Co-

generation Plant, which was the first power station to be powered by gas in the whole of Africa and Natal Portland Cement (NPC), which supplies cement to most parts of Africa (Provincial Review, 2016).

In a report by Botha (2016), she stated that KZN would contribute 15.7% towards South Africa's gross domestic product (GDP) in 2017. Botha (2016) also stated that KZN was second in position in terms of economic contribution in the country, with Gauteng being the first.

1.3 Relevance of study

It has already been established that amongst all sectors, manufacturing is a major contributor to economic growth in both the developed and developing countries. Authors like Pacheco-López, Penélope and Thirlwall (2013) further cited that a strong causal association existed between increase and growth in manufacturing output and growth in GDP of any country.

McKinsey Global Institute also presented a report in 2012 which clearly highlighted the importance of manufacturing companies in contributing to the global economy currently, and how this contribution from the sector will evolve over the coming decade. As stated by Manyika, Sinclair, Strube, Rassey, Mischke and Remes (2012) of The McKinsey Global Institute, consumption of manufactured goods by the global market is currently at \$32 trillion and this expected to double within the next decade. According to Manyika et al. (2012), the manufacturing sector contributed 16% to the world's GDP in 2012. The same authors also stated that an estimate of 70% of the total global trade for the year 2011 was from the manufacturing sector, which assisted in generating 19 cents of inputs for the service industry from every United States dollar of manufacturing output. In 2012, The United Nations issued a report for 2011 stating that the manufacturing sector employed 63 million people worldwide, while 27 trillion US dollars had been generated by the manufacturing sector alone in terms of revenue. This, according to another report by The United Nations (2013), was an increase of 450 % since 1990. These figures show that manufacturing companies from both developed and developing countries have been striving to develop their individual footprints globally.

However, this also increases the challenges of managing these said global footprints in order for manufacturing companies to stay competitive on the global market.

Gomes, Yasin and Lisboa (2011:5-30) pointed out that currently, no SPMS has met the performance measurement needs of the manufacturing sector as yet. This, according to the three authors, is because current PMSs are not realistic and they lack integration and practicality. Taticchi et al. (2012b:593-614) cited that the reason for there not being a SPMS developed specifically for the manufacturing sector is because literature on performance measurement has concentrated on following business trends instead of adapting to the globally dispersed manufacturing networks that are constantly emerging.

Although the rise of global manufacturing is welcome, companies still face challenges and difficulties when trying to manage manufacturing networks and interlinked sites (Rudberg and West, 2008:91-106). The fact that a company's current strategies, goals and visions might become outdated and need to be (re)formulated in future further complicates the matter, which means that there is always a need for managers to understand the dynamism that globalisation brings to manufacturing. Since manufacturing networks have become interlinked, it is a requirement for managers to shift their focus and understanding of manufacturing site performance. It is now important to move from the mentality of just being operative and producing output by focusing on costs, to focusing on the understanding that there is now need for the incorporation of non-financial performance measures in order to successfully capture different aspects of performance in manufacturing networks (Franco-Santos, Lucianetti and Bourne, 2012: 79-119)

Micheli and Manzoni (2010:465-476) stated that, generally, managers rarely make use of performance measurement systems (PMS) to implement strategy in their organisations. Furthermore, Busi and Bititci, (2006:7-25) highlighted that literature on performance measurement has failed to consider two vital facts in business management, namely:

- In a manufacturing network, a manufacturing site can assume a different role and

- Manufacturing organisations have complicated internal business processes that are usually operational at the same time, which can produce different results.

Since the above facts are not considered, it means existing PMSs are not adequate for manufacturing companies because these PMSs are not linked to strategy and therefore are not successful in translating organisational strategy from network level to other sites, business units or other business operational levels (Busi and Bititci, 2006:7-25). Therefore, a business that tries to implement its performance measurement based on existing PMSs would not be able to utilise the latest and current aspects of their manufacturing strategies at network level (Busi and Bititci: 2006:7-25).

The above claim was supported in research done by Busi and Bititci (2006:7-25) on a company called Chassis Technology Company (CTC), which is based in Europe. In this company, performance measurement for managers at site level was previously based on the calculation of return on capital employed (ROCE) of the whole company and the enterprise's divisions, business units and sites. Performance goals were also set based on financial dimensions only. When the company grew from having just a few sites that were only based in Europe to having a huge manufacturing network of 121 business enterprises across the world, it was apparent that performance now needed to be measured and implemented from a network perspective, rather than from just a site perspective. In order to accomplish this, the company decided that from 2014 onwards, other non-financial measures were going to be used when evaluating the performance of its site managers. Financial performance was going to be based on 40 %, while internal processes (operational performance) and meeting of strategic management goals were going to be based on 40% and 20% respectively. Strategic goals were set on an individual basis and in the following year (2015), performance achievement was going to be set at 30% because the company now valued this as an important achievement. Financial performance, however, became less important for the company and in 2015, would be decreased to 30%. According to Busi and Bititci (2006:7-25), the introduction of non-financial measures in CTC was justification that, generally, existing performance measurement systems (PMSs) needed to be adjusted since focusing on financial measures only had proven to be inadequate.

Even though managers of manufacturing networks know that traditional PMSs have major shortcomings, most managers have failed to overcome the financial focus imposed by these existing PMSs (Busi and Bititci, 2006:7-25). This research on the CTC supports the statement by Bititci, et al. (2012:305-327) that existing PMSs only focus on financial measures, therefore creating a gap between a company's vision, mission and its goals and objectives. Moreover, as shown in the case for CTC above, strategy has become an important dimension in performance measurement since the achievement of strategic goals has a positive impact on a company's performance.

This research therefore aims to close the gap created by traditional PMSs by developing a SPMMS, in the form of a balanced scorecard, which can link manufacturing goals to company strategy so that the visions and missions of manufacturing companies are met. This model will assist manufacturing companies to clearly understand and appreciate the relationships that exist between strategy, PMSs and organisational performance, as well as enhance their overall organisational effectiveness.

This research will further assist the organisations under study and all other interested manufacturing companies to understand that:

- By using a SPMMS, a company's strategy will be translated into measures and objectives which, when clearly communicated throughout the organisation, would facilitate the closure of the gap that exists between the company's vision and its internal operations (activities);
- The cause-effect relationships of the measured variables will be clearly represented by the developed model, which would facilitate communication and encourage learning within an organisation; and
- Consequently, if senior managers in an organisation use a SPMMS, they would be aware of any need to (re) formulate strategy sooner than in companies that do not use SPMMSs. If a company is able to change this awareness to operation, it can be safely deduced that earlier awareness means that (re) formulation of strategy is done sooner and also more often than in a company without a SPMMS.

1.4 Research Motivation

In order to realise a competitive advantage, many companies have been forced to search for better and new opportunities due to fierce competition worldwide. According to Jacob and Strube (2008), a manufacturing company that manages its global footprint from a network perspective can have cost savings of about 45%. However, such a potential requires managers to fundamentally understand the different global markets, diverse customers, technologies and the business processes that are involved, and such information is usually centrally unavailable (Jacob and Strube, 2008). This means that most manufacturing companies fail to realise this cost-saving potential.

In the CTC case discussed above, the degree of site managers' strategic achievements could have been monitored by use of a SPMMS since this tool is useful in putting the strategies of any company into action (Micheli and Manzoni, 2010:465-476). However, Dossi and Patelli (2010:498-526) postulated that many PMSs that are defined and described in current scientific literature are not useful for manufacturing companies like CTC which have global manufacturing networks. This, according to Dossi and Patelli (2010:498-526), is because most PMSs were designed only for functions of manufacturing sites and global network perspectives were not incorporated into the PMSs. Moreover, these PMSs fall short when it comes to measuring varied perspectives and dimensions of manufacturing sites based on site roles since they concentrate on financial measures only (Dossi and Patelli, 2010:498-526). As pointed out by Gomes et al. (2011:5-30) earlier, there is no PMS currently that can be adopted and accepted in a manufacturing environment to accurately measure performance. Gomes and colleagues contended that there is a lack of practicality, realism and integration in existing PMSs (Gomes et al., 2011:5-30). Taticchi et al. (2012a:41-54) maintain that failure by scientific literature to adapt to the fact that manufacturing networks have emerged and these are globally dispersed, is the reason why current PMSs are not practical when the measuring performance of manufacturing enterprises.

1.5 Background to the study

Kolehmainen, (2010:527-554) stated that globalisation, well informed customers, improved technology and deregulation of markets have caused major changes in the business world. This poses many challenges, especially for manufacturing companies that have to compete for skilled talent; compete for customers and look for new ways to satisfy and retain existing customers; maintain good relationships with suppliers; and at the same time improve relationships with employees who have become more empowered. According to Kolehmainen (2010:527-554), it is now these intangible assets which can create value and competitive advantage for manufacturing companies. In reaction to the above challenges, manufacturing companies are trying to change their operations to include intense innovation and customisation of products in order to satisfy customers. This intense global competition and all the above challenges have brought about uncertainty and a lack of predictability, which makes decision-making very tough for managers (Kolehmainen, 2010:527-554).

Due to these rapid changes and complexity in the business environment, measuring past financial performance, as in the case of traditional PMSs, becomes less accurate and not valuable in order to guide managers in making strategies and other options for the future, since decisions that are not well-informed can become disastrous for the company (Kolehmainen, 2010:527-554). This, according to Kolehmainen (2010:527-554), is why traditional performance measurement systems have been criticised since the mid-1980s, with the major criticism being the fact that PMSs that focus on financial measures only do not provide managers with sufficient required information to make decisions and efficiently and effectively manage internal business processes. Kolehmainen, (2010:527-554) attributed this “measurement myopia” to the current call in scientific literature for management control systems that are more strategic. Kolehmainen, (2010:527-554) described strategic control as a process which focuses on the following two statements:

- the company strategy must be and is being implemented as planned; and
- the intended results are the same as the ones being produced by the formulated strategy.

According to the above statements by Kolehmainen (2010:527-554), a clear link has to exist between a company's strategy and its performance measures. Many companies have acknowledged the need to link PMSs to organisational strategy. However, as stated by Dossi and Patelli (2010:498-526), most PMSs are not integrated and only focus on financial performance, hence the aim to develop an integrated SPMMS which can link goals to strategy and also focus on non-financial measures of performance.

Gimbert, Bisbe and Mendoza (2010:477-497) explained that strategy must be viewed and considered as how a company plans and ploys to gain competitive advantage and how well it sustains this competitive advantage against other companies in the industry. Artley and Stroh (2001:11-12) further cited the need for performance measures to be aligned with organisational strategy. The two authors also noted that PMSs only succeed when the company's vision, mission, strategy and values are clearly communicated to all employees and to external stakeholders. This, in return, would create a unified focus which informs every employee on the importance and value of their individual contribution to overall organisational performance and to the expectations of other stakeholders, such as customers. A PMS therefore has the goal of guiding senior managers; to communicate strategy from top to bottom; to assess the progress of the intended strategy; and evaluate individual, departmental and organisational performance (Woiceshyn, 2009:298-319)

Bisbe and Otley (2004:709-737) stated that PMSs were designed mainly to link goals and measures to strategy in order to achieve overall performance and competitive advantage. Hence, it is justified to hypothesise that a causal relationship exists amongst the variables in this study: performance measurement systems, strategy and organisational performance. Although various studies have been conducted on PMSs, Chenhall (2005:395-422) still feels that efficiency and financial based measures have become inadequate on their own, while non-financial measures like customer satisfaction have increased in their relevance. A study conducted by Micheli and Manzoni (2010:465-476) concluded that PMSs that are strategic (SPMSs) would help companies align attitudes and behaviours to strategy while achieving strategic

objectives. A study by Dossi and Patelli (2010:499) included non-financial measures in the SPMSs to evaluate performance relationships between a company's headquarters and its subsidiaries. Results of their findings revealed that using non-financial measures contributed to learning and alignment of strategy throughout organisations. Another study conducted on large Spanish companies by Bisbe and Malague'no (2012:298) incorporated dynamism into a SPMS and how such a system could be used as a tool to develop strategy.

In South Africa, Deloitte and Touche HCC conducted a survey in 2009 in which they concluded that as much as 95% of the workforce in South Africa does not understand their companies' strategies; 70% of organisations' management incentives are not linked to company strategy; and only 37% of South African companies use strategic performance measurement systems, while the majority of the companies still use only financial performance measurements like gross profit, net profit and ratios: measurements which, according to Taticchi et al. (2012b:593-614), do not provide strategic direction and development, while also failing to give a competitive edge or advantage. Businesses should therefore be made aware of the importance of incorporating both financial and non-financial measurers into performance measurement systems. A press release issued by Corrigan (2006) stated that despite the widespread use of very good financial and accounting software systems and internal business software, a huge number of South African companies are still struggling to achieve an integrated view of their performance. Local businesses, according to Corrigan (2006), lack a framework where managers can evaluate their companies' integrated performance against set strategic objectives.

In South Africa, like in any other developing country, a successful manufacturing sector is vital for job creation and economic development. The manufacturing sector in the country presently has over 1, 6-million people employed in it and is one of the top three sectors creating the most revenue and adding economic value through export earnings. Zalk (2014:1-8) highlighted in his research that the core driver of growth in GDP in South Africa is manufacturing. The sector also provides direct employment while the services sectors in particular would have to depend on GDP growth from manufacturing

in order for them to increase employment. In his SONA speech in 2018, the current president of South Africa, President Cyril Ramaphosa, further emphasised the importance of manufacturing and the need to invest in the sector as the most effective way of growing the economy, increasing GDP, increasing exports and therefore reducing the country's trade deficit. This will consequently reduce the unemployment rate in the country. Based on the importance of manufacturing both globally and in South Africa, it is therefore crucial that manufacturing companies implement the most current aspects of strategic management and performance measurement if they want to achieve and maintain a competitive advantage. The use of strategic performance measurement systems would potentially help organisations effectively formulate, implement, evaluate and (re)formulate strategies. Furthermore, if the top management in an organisation uses SPMSs, there is awareness of any need to do incremental changes to strategies or completely (re)formulate those that are not working sooner rather than later.

1.6 Theoretical gap in the study of SPMSs

As cited by Bititci et al. (2012:305-327), there has been much research on both performance measurement and management. However, Bourne (2008) cited the failure of previous researchers to create performance measurement models that are specific for manufacturing. On the other hand, Micheli and Manzoni (2010:465-476) cited that streams of studies have emerged which suggest that strategic performance measurement systems be used effectively for both strategy formulation and implementation processes. However, as much as previous studies concur that the use of strategic performance measurement systems could have a positive impact on organisational performance, there has not been an empirical study that investigated the possibility of strategy as an ingredient for this positive association.

Since none of these studies managed to develop a SPMS that is specific and valid for manufacturing companies, the researcher detected a gap and therefore intends to investigate the association between strategy and organisational effectiveness. As

guided by Bisbe and Malagueno (2012), the researcher also intends to investigate the degree to which this association is fully or partly accounted for by effective implementation and evaluation of intended strategies through the efficient and effective use of SPMMSs.

The use of strategic performance measurement and management systems will therefore potentially help organisations convert their formulated strategies into specific targets, objectives, action plans and measurable goals that can be clearly communicated, implemented and evaluated. This in turn will enable businesses to translate their vision into action and reality, thereby achieving organisational effectiveness.

1.7 Research Objectives and questions

The following discussion outlines the problem, aim and objectives guiding this study

1.7.1 Problem Statement and Aim

Previous studies have cited the possibility that the use of SPMSs and strategy could improve organisational performance. Micheli and Manzoni (2010:465-476) also stated that streams of studies have emerged which suggest that SPMSs are effective tools for strategy formulation and implementation. These authors did not however investigate the role of the whole process of strategy (including evaluation and (re)formulation) in improving organisational performance through the use of SPMMSs. The researcher also envisages that a company using SPMMSs would identify strategies that are not working and (re)formulate them sooner than a company that does not use SPMMSs. Since SPMSs as highlighted above incorporate both financial and non-financial measures, the researcher envisages all stakeholders (employees, investors and customers) to be more satisfied if a company is using a SPMMS than if it is not. Hence, the researcher derived the first research question: Does the use of SPMMSs positively impact organisational performance resulting from the effective formulation; implementation; evaluation and (re)formulation of strategy? The researcher also aims to investigate if

the use of SPMMSSs results in managers engaging more in strategic management processes, hence positively impacting on customer satisfaction and improved organisational performance.

Streams of studies have cited the shortcomings of current PMSs, which are traditional in nature, in providing managers in the manufacturing sector with information to make decisions efficiently and effectively. A research conducted by Dossi and Patelli in 2010 observed that current PMSs are not designed for manufacturing functions, which makes them of very little use to manufacturing companies, manufacturing networks or their business units / sites. This makes it very difficult for manufacturing managers who need to implement strategy and measure performance for their networks in a more integrated way. This research therefore closes this gap by developing a strategic and integrated PMS specifically for manufacturing networks, which can also be used by manufacturing companies with single sites.

1.7.2 Objectives of the study

The researcher's main objectives are:

- i) To investigate the types of PMSs being used by manufacturing companies in KZN and to establish the extent to which these PMSs could be classified as SPMMSSs;
- ii) To develop a model (SPMMS) which will assist manufacturing companies in understanding the associations between this study's variables: strategy, performance management and measurement (by use of PMSs) and overall organisational effectiveness (performance) and how this relationship will enhance their overall organisational effectiveness; and

The researcher will use the Balanced Scorecard (BSC) by Kaplan and Norton (1992) as a reference model for the study, giving rise to the third objective, which is:

- iii) To test the applicability of the BSC as the relevant SPMS for manufacturing companies. The BSC will be used to test:

- the potential existence of a positive association between the use of SPMSs and organisational performance;
- the association between the use of integrated SPMMSs and the frequency of strategy (re)formulations; and
- the possibility of a positive relationship between the use of financial and non-financial measures with organisational performance.

1.8 Research methodology

1.8.1 Literature study

Data for the study will mainly come from books, academic journals, the internet, articles and publications.

1.8.2 Data collection

The research problem above will be solved by applying a positivist approach. This decision was influenced by the following characteristics of a positivist paradigm, as cited by Thakur (2005:165):

The approach allows the researcher to:

- Look for causal associations and fundamental laws;
- Formulate hypotheses which can then be tested; and
- To be independent from the research.

Since quantitative research is more scientific in its methodology than qualitative research, Thakur (2005:165) postulates that quantitative research is thus more trustworthy.

Quantitative data collection was also preferred because of its ability to provide the researcher with objective information that can be used to make scientific assumptions (Thakur, 2005:165). The decision to use a positivist approach was influenced by Thakur

(2005:165), who cited that positivism gives the researcher the ability to economically collect a large amount of data and it allows greater opportunity for the researcher to retain and maintain control of the research process. A positivist approach makes the collected data easy to compare and interpret and is less time consuming.

1.8.3 Target Population

According to McBurney and White (2009:248), the target population is the total group of potential respondents from which the researcher can draw a sample. The target population of this research was all manufacturing companies in Kwa Zulu - Natal with a minimum of 51 employees. However, this targeted population was too large for the researcher to attempt to survey all of its members, so a small sample of ten companies which were easily accessible to the researcher and where the researcher was certain to receive responses from, was selected.

1.8.4 Data analysis

Data analysis in research is the process of cleaning, transforming and modifying collected data so that only useful and necessary information is extracted and used (Sekaran, 2003:301).

The researcher will employ the following methods of data analysis: computations of frequencies, computations of percentages, graphs, tables and charts through descriptive statistics and correlation analysis to analyse the data collected.

1.8.5 Research Hypothesis

A research hypothesis is a clear and specific statement about what the researcher predicts as the possible outcome of the research. A research hypothesis should be testable (Boudah, 2011). According to Boudah (2011), the researcher formulates hypotheses based on the proposed relationships expected between variables.

Based on the research questions above and on her proposed expectations of associations amongst the variables: strategy, PMSs and organisational performance, the researcher formulated the following hypotheses which will be tested in chapter 5:

H1: There existence a positive association between the use of SPMMSs and organisational performance.

H2: There is a positive association between the use of integrated SPMMSs and the frequency of strategy (re)formulations.

H3: An indirect positive relationship exists between effective strategy (implementation and evaluation) and organisational performance through the incorporation of financial and non-financial measures

1.9 Research structure

This study is broken down into eight chapters as follows:

Chapter 1: Introduction

A brief summary of the province of KwaZulu-Natal is outlined in Chapter one. The chapter also sets out the relevance and motivation for the current study. An introduction and background to the role played by SPMMSs in strategy and overall organisational performance in the manufacturing sector is provided. The research problem is outlined, along with the research questions and objectives. The researcher also states the significance of the study and its benefits, not only to the organisations in the sector being studied but to all other interested organisations in different sectors.

Chapter 2: Definitions and introduction of variables

Chapter Two will present basic definitions of the study related to manufacturing, performance measurement, performance management, strategic management and organisational performance.

Chapter 3: Theoretical developments and literature review

There will be a discussion and analysis of previous literature and findings of previous studies in Chapter 3. This chapter will also present guidelines for performance measures and SPMMs in order to guide the development of the proposed model in Chapter 6. Current PMSs will also be discussed briefly in this chapter. Thereafter, the reference model (the BSC) will be introduced and discussed in detail. Formulated hypotheses will also be validated based on the review of literature.

Chapter 4: Research methodology

Chapter 4 will give a detailed outline of the methods and procedures which used for data collection and analysis and is further structured as follows:

- The establishment and definition of the research population
- Sample selection
- Research instrument development and administration
- Data Collection
- Validity and reliability of collected data
- Short summary of the chapter.

Chapter 5: Discussion and interpretation of results

The researcher analyses the data collected and presents the findings and results in a more meaningful way, for example by using of graphs, charts and tables. The results and findings will then be discussed and linked to the hypotheses being tested and the literature review. An evaluation of existing performance measurement systems being used in the sampled companies under studied is also conducted.

Chapter 6: Development of a SPMMS for manufacturing companies

There will be a step-by-step process to design and develop a SPMMS for manufacturing companies. The chapter also answers the research questions stated in Chapter 1. One

company is going to be used as a case study during the design stage and for the development of the proposed SPMMS.

Chapter 7: Applying the developed SPMMS to the case company

This chapter is used to determine if the developed SPMMS is valid and applicable at the case study company and how the results can be generalised to the manufacturing industry as a whole.

Chapter 8: Conclusions and Recommendations

The last chapter summarises the full research, gives a brief discussion of the researcher's findings and establishes whether the research questions, as formulated, were answered in full by the study. Contributions to theory, study limitations, recommendations and further study are also detailed in this chapter.

1.10 Chapter Summary

This chapter's aim was to introduce the study and to give a background to the study variables: strategy, PMSs and organisational performance. The chapter also proposed the possible associations between the study variables. The researcher justified why there was a need to focus on the study constructs: manufacturing, strategy, PMSs and organisational performance. The significance, research problem and the main objectives of the study were clearly stated. The chapter ended by providing a brief overview of the methodology to be employed and how the study will be structured. Chapter 2 will give definitions of the terms used in the study and introduce the study variables.

CHAPTER TWO

DEFINITIONS AND INTRODUCTION OF THE VARIABLES

2.1. Introduction

Domestic and international markets have faced intense competition, with customers becoming more demanding and assertive. Due to technological advancements and globalisation, customers can easily access information about products worldwide, which puts great pressure on manufacturing companies to earn a place on the international market and try to achieve and maintain a competitive advantage (Spencer, Joiner and Salmon:2009:83-103).

The literature review suggests that many companies have, in the last decade, changed and improved their PMSs (performance measurement systems) and PMMs (performance management systems) from traditional financial measurement to the adoption of more integrated and flexible PMSs that are also strategic in nature (Micheli and Manzoni, 2010:465-476). Although many researchers agree that a positive association does exist between SPMSs and effective communication in organisations, the significance of this strategic management through formulation, implementation, evaluation and re-formulation of strategies to improve manufacturing organisational performance is yet to be examined.

The researcher aspires to unify the following research streams: performance measurement systems (PMS), manufacturing organisations, strategy and organisational performance. The literature review for this study is divided into two:

Chapter Two gives the basic definitions of terminology while also highlighting importance of, as well as the roles of performance measurement systems.

The second chapter of the literature review (Chapter 3) provides an analysis of the existing types of SPMMS and their limitations, discusses the relationships between strategy, performance measurement and organisational performance while also discussing strategic management in detail. Guidelines and requirements for both performance measures and SPMMSs are identified. Chapter Three ends by validating the formulated hypotheses which will be used in testing the association between strategy, performance measurement systems and organisational performance.

2.2. Basic Definitions of Terminology

There is a plethora amount of literature on strategic management, performance measurement and management and organisational performance, resulting in different scientific disciplines with authors giving different definitions to terms, some of which overlap or contradict each other. The terms used in this study and their definitions are clarified below.

Definitions Related to Manufacturing:

2.2.1. Manufacturing

Stevenson (2010) described manufacturing as the processes and methods a manufacturing company employs in order to convert inputs (raw materials) to outputs (product) by utilising their human, tangible and intangible assets.

2.2.2. Manufacturing Function

The manufacturing function, according to Panneerselvam (2007), comprises the actual activities and tasks that the different functional departments of a manufacturing company perform, from purchasing of inputs (raw materials) to the internal production processes involved to the finished physical product. The manufacturing function involves functional departments like procurement, operations, production, finance,

human resources, sales and marketing. At each production stage, value is added to the product. Panneerselvam (2007) further stated that the manufacturing function makes decisions on the manufacturing process. For example, which steps should a particular product go through until it is complete and which particular equipment is utilised in the production process, using what inputs. The diagram below presents a summary of the manufacturing function.

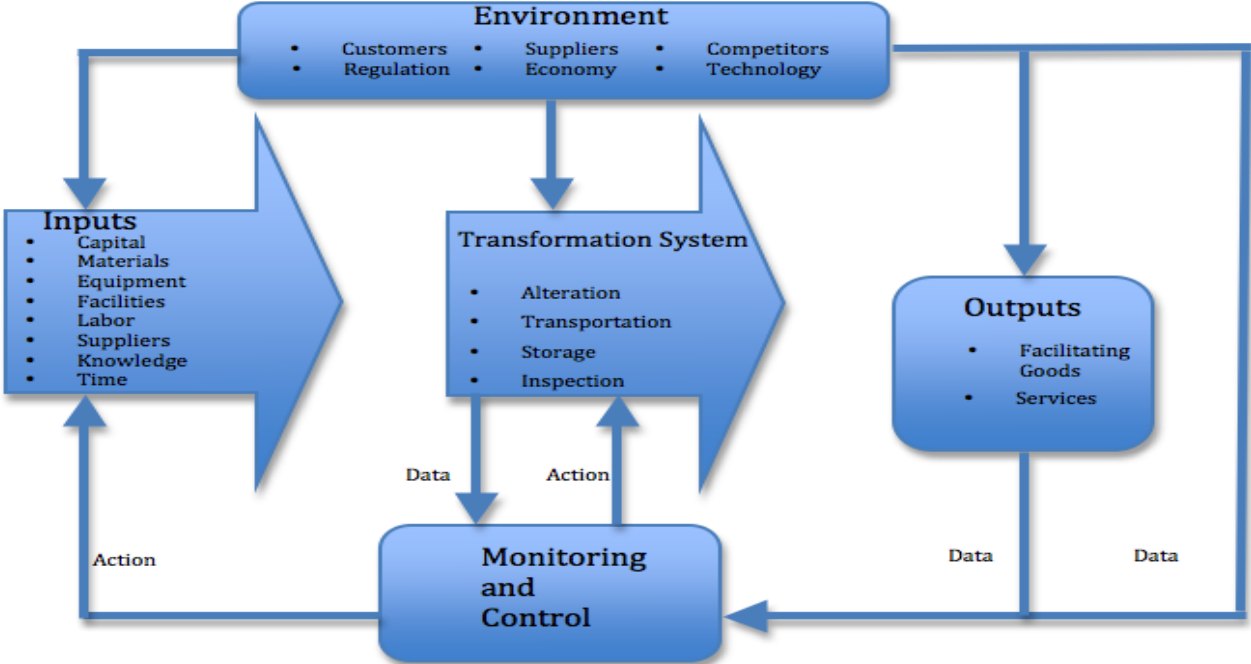


Figure 2.1: Manufacturing function.

Source: Panneerselvam (2007)

2.2.3. Supply Chain Management

According to Aref, Hervani, Helms and Sarkis (2005:330-353) and as shown in Panneerselvam’s manufacturing function diagram in Figure 2.1 above, supply chain management (SCM) involves value addition by managing the acquisition of the inputs (raw materials, capital, equipment, human resources and time) and efficiency in internal business processes (production) in order to meet customer demands (outputs / product). Furthermore, Khan (2013) stated that if a supply chain is effectively

managed, it has the potential to become a business's strategic tool to improve organisational effectiveness and maintain a competitive advantage.

Despite the importance of including supplier performance and supply chain management as part of a firm's strategy, very few researchers have dealt with the subject. However, the last decade has seen a few researchers realising the need for supply chain management to be used as a strategy to lower costs; improve the quality of both raw materials and the finished product; and hence, improve customer satisfaction (Hervani et al. 2005:330-353).

2.2.4. Manufacturing Site

Vereecke, van Dierdonck and de Meyer (2006) defined a manufacturing site as a factory or building where a manufacturing company produces its products. Some researchers like Miltenburg (2009:6179-6203) have used the word subsidiary or plant to describe a manufacturing site.

2.2.5. Manufacturing Network

Pekkola (2013) described a manufacturing network as a number of manufacturing sites that belong to the same manufacturing company. For example, a manufacturing network in South Africa would have sites in Johannesburg, Cape Town and East London, with their controlling company or headquarters in Durban. These sites are usually distant from each other, with different managers overseeing different manufacturing sites. However, manufacturing sites are not run in isolation, as they report to the controlling company (Rudberg and West, 2008:91-106).

2.2.6. Strategy

Thompson, Strickland and Gamble (2007:19) define strategy as a plan, ploy, pattern, perspective and process a business uses in order to achieve goals and objectives as

stated in the organisation's vision and mission statements. The process takes an organisation from where it is now to its desired future.

This research's focus was set on how formulated (intended strategy) is translated by the business into goals and objectives (intended strategy) to achieve organisational effectiveness through the use of a SPMMS.

2.2.7. Manufacturing Strategy

Based on the definition of strategy by Thompson et al, (2007: 19) and the definition of the manufacturing function above, the researcher adopted the following definition for a manufacturing strategy: it is a formulated strategy that revolves around the manufacturing function of a company. The manufacturing strategy must however be linked and aligned to the overall corporate strategy. The manufacturing strategy therefore defines how the manufacturing sites operate and how resources are allocated effectively to each site in order that the overall manufacturing network's goals and objectives are achieved. Hudson and Smith (2007:393-408) cited that this alignment and integration of manufacturing strategy with overall business strategy assists manufacturing companies achieve organisational performance.

2.3. Definitions related to performance measurement

2.3.1. Performance

Different authors, for example Tangen (2004), Kretschmer (2008) and Pekkola (2013), have provided a variety of definitions for performance from different dimensions, with some defining the performer first, for example a company, an employee, a site or a department in a company; from whom the product was produced (the stakeholder), for example suppliers, shareholders and customer; to the perspective the performance is measured and compared to, for example customer satisfaction, liquidity and financial performance. Tangen (2005:46-54) defined performance as how effectively and

efficiently an action is carried out, while Kretschmer (2008) defined it as the degree an individual, a department, a company, a site or business unit achieves a set goal.

2.3.2. Performance Measures

Performance measures are indicators used to evaluate a company's degree of achievement of set goals and objectives (Meyer, 2008). According to Micheli and Manzoni (2010:465-476), performance measures need to be quantifiable and need to be linked to long-term strategy. Wouters (2009:64-78) states that the performance measures of one company can be used in another company, provided the companies are in the same industry. Moreover, Gunasekaran and Kobu (2007:2819-2840) cited that if performance measures are linked to strategy, they assist in giving employees direction and keep them on track.

2.3.3. Performance Measurement

Performance measurement was defined by Tangen (2005:49) as a process that assesses how well an organisation succeeds by economically acquiring resources, being effective and efficient in the deployment of those resources in order to achieve its objectives. Performance measures can be based on both financial and non-financial information (Dermatini, 2014). Historically, companies have been reported to have only measured financial performance based on profitability, sustainability and liquidity ratios. However, these measures focus on financial performance only and ignore other performance dimensions like customers, internal business processes and employee satisfaction as per Kaplan and Norton's (1996) integrated perspectives.

The Department of Trade and Industry (2011) stated that performance measurement is important as it enables an organisation to:

- Effectively identify and track progress against its set goals;
- Attain competitive advantage and identify opportunities for further improvement;
and
- Compare its own performance against local and international standards.

Chow and Van der Stede (2006:10-19) criticised traditional measurement systems for being focused on financial measures and ignoring non-financial measures. The reason for this growing criticism is that prevailing business conditions have evolved and are now different from the time traditional performance measurement was introduced. To add to this, political, economic, social, technological changes also cause markets to fluctuate. Substitute products and supplier information is now available online, resulting in more educated and demanding customers. Investors also require more integrated, transparent and current reporting as opposed to historical information (Ashton, 2001:80). Performance measurement systems that can integrate strategy, vision, financial and non-financial measures are more effective for strategic decisions and for assisting managers identify areas that need strategic (re)formulations.

Companies implement performance measurement in order to improve overall the organisational efficiency and effectiveness so that customers are more satisfied, resulting in repeat purchases and improved organisational performance that satisfies all stakeholders (Johnson, 2007:1).

2.3.4. Performance Measurement Systems

These systems are described as the processes and techniques that organisations utilise in collecting performance data, analysing it and evaluating the data against set targets and goals. PMSs can use financial only or both financial and non-financial measures (Gimbert et al., 2010:477-497). Bititci et al. (2012:305-327) postulated that PMSs linked to corporate strategy can be tools to achieve organisational success.

2.3.5. Performance Measurement and Management (PMM)

Busi and Bititci (2006:7-25) maintain that performance management uses the collected data from the performance measurement process defined above to make a positive

change to an organisation by using such data to set specific targets, goals and objectives, as well as to allocate resources based on the priority of the set goals.

2.3.6. Performance Measurement and Management Systems (PMMS)

Taticchi and Balachandran (2008) expanded on Wiley's (2009:251-274) definition of performance management by stating that a performance measurement and management system is that system which an organisation uses as a tool to design a performance measurement system, implement measures and communicate the performance measurement system throughout the organisation. Both performance measurement and performance management cannot be used as stand-alone processes as one depends on the other in a continuous cycle.

2.3.7. Strategic Performance Measurement and Management Systems (SPMMS)

PMSs can be operational (day-to-day activities of an organisation) or they can be strategic and integrated (incorporating the organisations's long-term strategy and goals, dealing with the mission and vision of the company and is performed by executive management); tactical (dealing with short-term actions and plans, performed by senior managers); or they can be operational (day to day business processes, performed by functional as well as lower level employees). These types of PMSs that incorporate long-term strategy, vision and mission are called strategic performance measurement systems (SPMSs) (Bisbe and Malagueño, 2012:296-311). Franco-Santos, Kennerley, Micheli, Martinez, Mason, Marr, Gray and Neely (2007:784-801) also added that, a SPMS is not only used just to collect data, but also to communicate strategy from top to bottom and also to implement the formulated strategy.

2.4 Challenges in Managing Manufacturing Companies

As pointed out by Stevenson (2010), most manufacturing companies were previously family owned, then grew slowly to become large-scale manufacturing networks. This

evolution from small-scale family-managed businesses to large single sites or manufacturing networks was a result of technological advancements and innovations, which meant that the manufacturing processes could be performed faster and more efficiently (Stevenson, 2010). Bititci et al. (2012:305-327) identified four distinct stages of development in business manufacturing processes from the 20th to the 21st centuries. These were: a) *the mass production era* which started during the industrial revolution and operated between the years 1860s – 1920s. This era involved the production of huge quantities of the same product at the lowest possible cost and then put the product on the market for anyone who wanted to buy. Products were not produced according to customer demands and specifications; b) *the lean production era* which is believed to have been pioneered by Henry Ford around 1927 together with the Just-In-Time system. Lean production, according to Bititci et al. (2012:305-327), believed and focused mainly on minimising all aspects of business processes from procurement to the delivery of finished products without compromising on product quality. It is the complete opposite of mass production as it believes that over-production leads to wastage due to the storage and warehousing of excess stock of finished goods. The motto for lean production is efficiency, effectiveness and cost minimisation and waste reduction; c) *the agile era* which started in the 1950s is based on designing flexible production processes using existing resources in the form of human, plant and equipment and raw materials for new product innovations or customise existing products based on customer demands. The focus is to be able to produce any model or type of product without additional huge capital investments. Agile manufacturing invests in research and development and robust technological software so that the current information is always available on what new resources are available for new innovations and designs at any given time, the main focus on agile is competitiveness, flexibility and readiness; d) *the networking era*, which is the current era, characterised by rapid advancements in technology, internet, automation, globalisation, deregulation, transactions are taking place online instantly, customers have access to information and are therefore more selective and demanding. Consequently, companies need to have flexible systems that enable them to respond to the ever-changing customer demands. According to Bititci et al. (2012:305-325), the

scope of performance measurement has become extensive in the networking era. Performance measurement must also follow suit and become integrated, focusing on financial as well as non-financial measures like customers, employees and their internal business processes (Iqbal, Nisha and Rifat, 2020: 55-73). However, Bititci et al. (2012:305-327) also pointed out that current PMSs have not integrated these other non-financial dimensions of performance measurement, hence the focus of this study to develop a SPMMS for manufacturing, which incorporates all dimensions of performance measurement and management in line with these dynamic changes in the manufacturing networking era.

2.4.1. The need for performance measurement

Companies use PMSs for different reasons, but mainly to check how well their product is performing on the market and how well the organisation is performing overall, usually from the financial perspective (Kaplan & Norton, 2001:22). Chenhall (2005:395-422), iterated that other companies use PMSs to improve business culture, to define objectives or for continuous development. For other companies, Chenhall (2005:395-422) cited other uses of performance measurement as follows:

➤ **Communication:**

For the effective communication of goals and objectives; evaluation of individual and departmental performance and to give feedback on performance.

➤ **Measurement and improvement:**

To evaluate if strategies had been implemented correctly so that areas that needed improvement would be identified.

According to Dossi and Patelli (2010:498), performance measurement is used for the following:

- To communicate,
- evaluate and control,
- reward and identify training needs,

- improve business processes and effectiveness, and
- align strategy and vision with organisational goals and objectives.

2.5. An Introduction to Manufacturing Strategy

Miltenburg (2009:6179-6203) defined a manufacturing strategy as the ploy employed by a company to effectively utilise all its resources in order to achieve a competitive advantage. Miltenburg (2009:6179-6203) also cited the location and nature of business as the main determinants of the manufacturing strategy to be formulated in order that competitive advantage is achieved.

Pun (2004) identified five different forms of strategy, namely: intended, deliberate, realized, unrealised and emergent strategies. An intended strategy is a formulated strategy as described in an organisation's business plan. It is the strategy that the company intends to implement. However, Pun (2004:903-928) cautioned that not all intended strategies are implemented successfully to become deliberate strategies as some will be abandoned along the way to become unrealised strategies. While trying to implement formulated strategies, unexpected threats or opportunities may arise, giving rise to incremental strategies which the company had not planned for. Pun (2004:903-928) named the unplanned strategies 'emergent'. A realised strategy is part of that formulated strategy that the company managed to implement and execute, meaning that a realized strategy was once intended, and then became a deliberate strategy and finally a realised one.

Pun (2004:903-928) summarised the five types of strategy by way of a diagram, as shown in Figure 2.2 below.

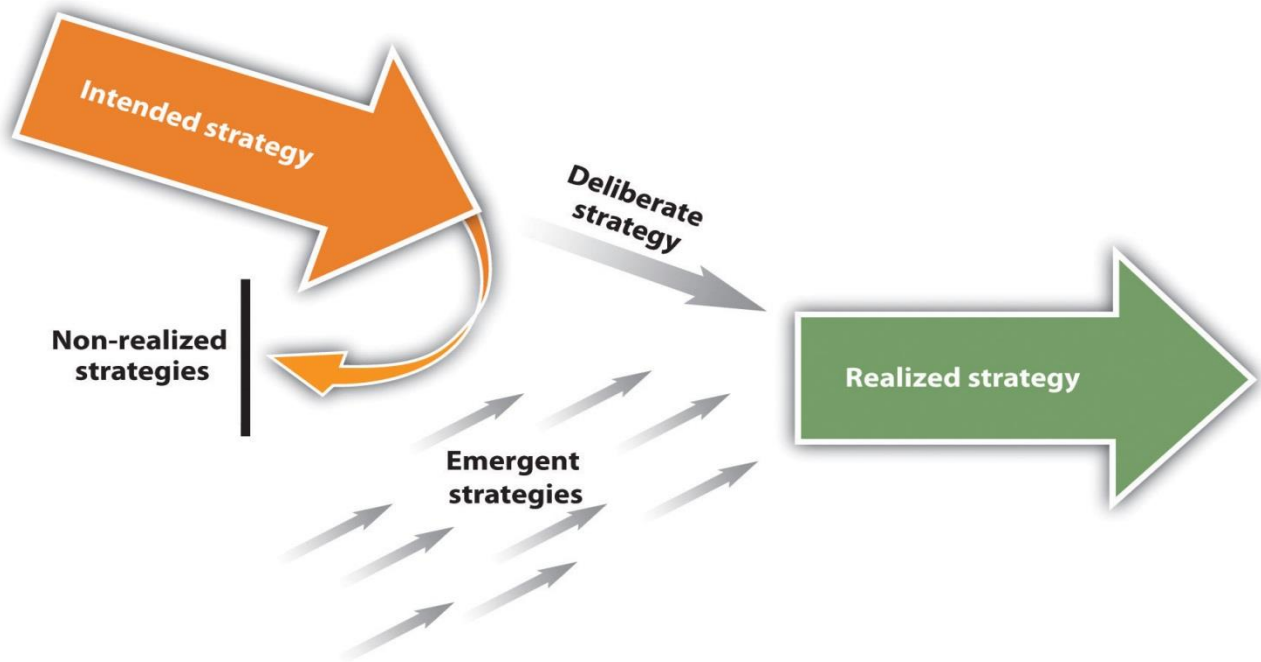


Figure 2.2: Types of strategy

Source: Pun (2004)

The definitions of manufacturing strategy by Miltenburg (2009:6179-6203) and Pekkola (2013) above provide a basic understanding of manufacturing strategy. However, as cited by Deflorin, Rathje and Friedli (2007), the definitions do not clarify the basic elements of a manufacturing strategy and how it can be derived from corporate strategy.

2.5.1. The formulation of manufacturing strategy

Thompson et al., (2007:19-20), described strategy formulation as the initial step of the strategic management process whereby a company sets its long-term goals and chooses the most appropriate route to take so as to achieve the said goals. The formulation of a manufacturing strategy, which stems from the formulated overall strategy, is a crucial process for any manufacturing company to succeed because it highlights the framework and activities to be taken in order to reach the desired goals. Strategy must be communicated to all employees from top to bottom so that everyone

is aware of what the organisation wants to achieve in terms of its goals, objectives and mission.

According to Thompson et al. (2007: 20 – 35), the main roles of processes for manufacturing strategy formulation are to:

- Enable communication throughout the organisation;
- Provide a platform for effective implementation and evaluation of strategy; and
- Cascade strategy throughout the organisation.

Literature on the importance of formulating a manufacturing strategy dates back as far as 1969 when Wickham Skinner developed a model to summarise the process of manufacturing strategy formulation. According to Skinner (1969:136-145), companies may be in the same industry but will have different strengths and weaknesses, hence they will have to compete differently. Manufacturing strategy therefore, according to Skinner (1969:136-145), is to be derived from the company strategy formulated by executive management but will be implemented at the functional level.

Skinner further illustrated the manufacturing strategy formulation process by way of a diagram, as shown in Figure 2.3 below:

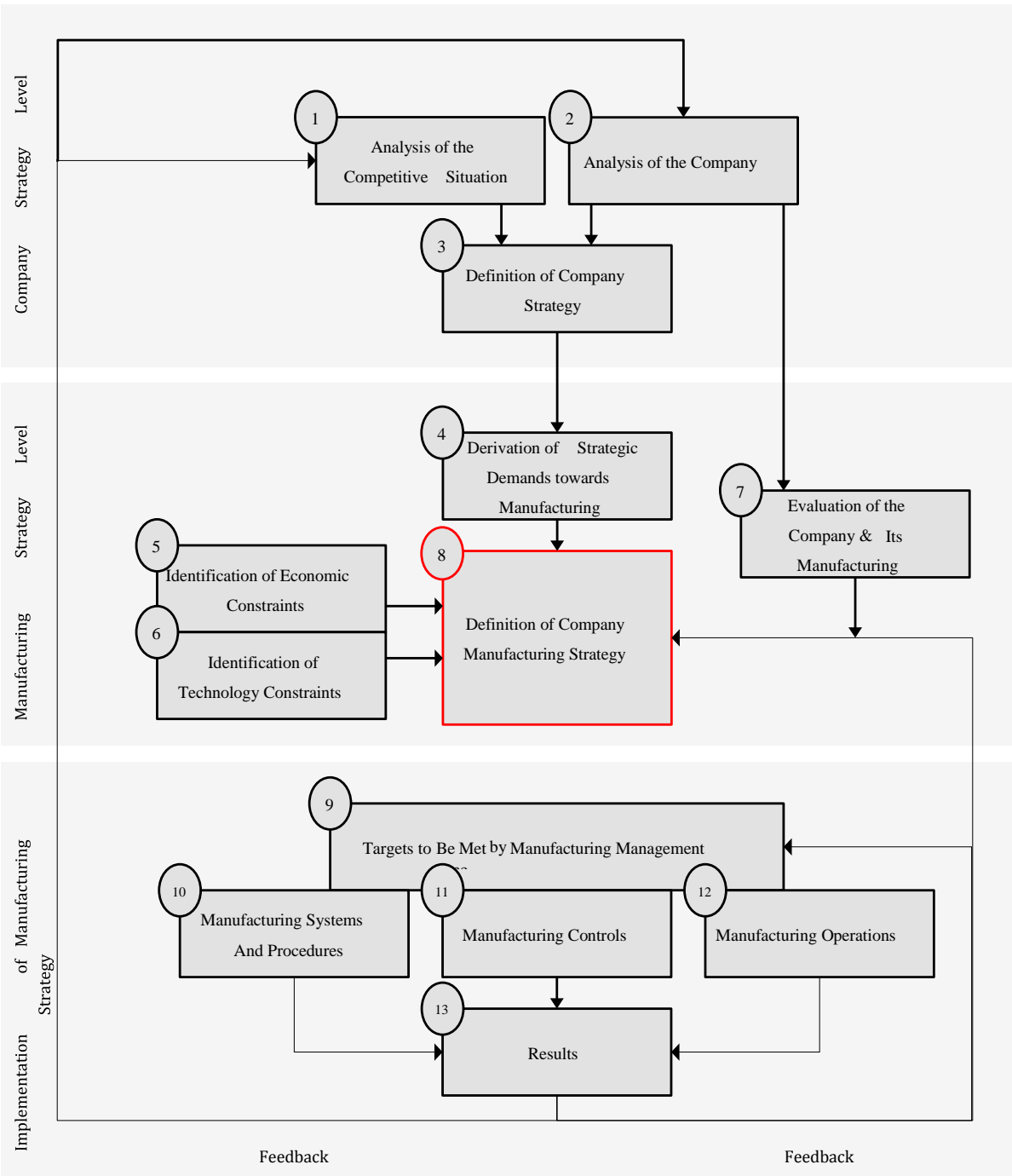


Figure 2.3 – Manufacturing Strategy Formulation

Source: Adapted from Skinner (1969)

According to Skinner (1969) and as further cited by Thompson et al. (2007:20-35), the manufacturing strategy formulation process is a 13 – step process as shown in Figure 2.3 above. These can be further consolidated into 7 main steps as discussed below:

i) Analysis of the competitive market

In order to know which formulated strategies to pursue, a company must scan both its internal and external environments to know its strengths, weaknesses, opportunities and threats. The first scan to be conducted should be the PESTEL (political, economic, social, technological, environmental and legal) analysis (Pekkola 2013).

The PESTEL analysis will now be discussed below:

The PESTEL analysis is usually used as a strategic technique to scan the macro environment or external factors that can affect the operations of a business. This is usually conducted after having formulated strategies and usually conducted for new projects, new sites (market penetration) or when a company wants to expand to foreign markets (Thompson et al., 2007).

According to Pekkola (2013), a company that is changing its performance measurement system to a SPMMS (an integrated one) should also conduct a PESTEL analysis since it is now going to integrate stakeholders like government regulators into its PMS.

The PESTEL analysis according to Bititci et al. (2012:305-327) is believed to have been invented by Francis Joseph Aguilar in 1967 when he wrote a book called 'Scanning the business environment'. Aguilar (1967), however, did not invent this analysis as PESTEL. He called his analysis ETPS, standing for economic, technological, political and social. Many scholars who came after Aguilar kept adding letters to the acronym to arrive at what it is now known as (PESTEL) (Bititci et al., 2012:305-327).

Thompson et al. (2007:20-35) further summarised the PESTEL analysis by means of a diagram as shown below:

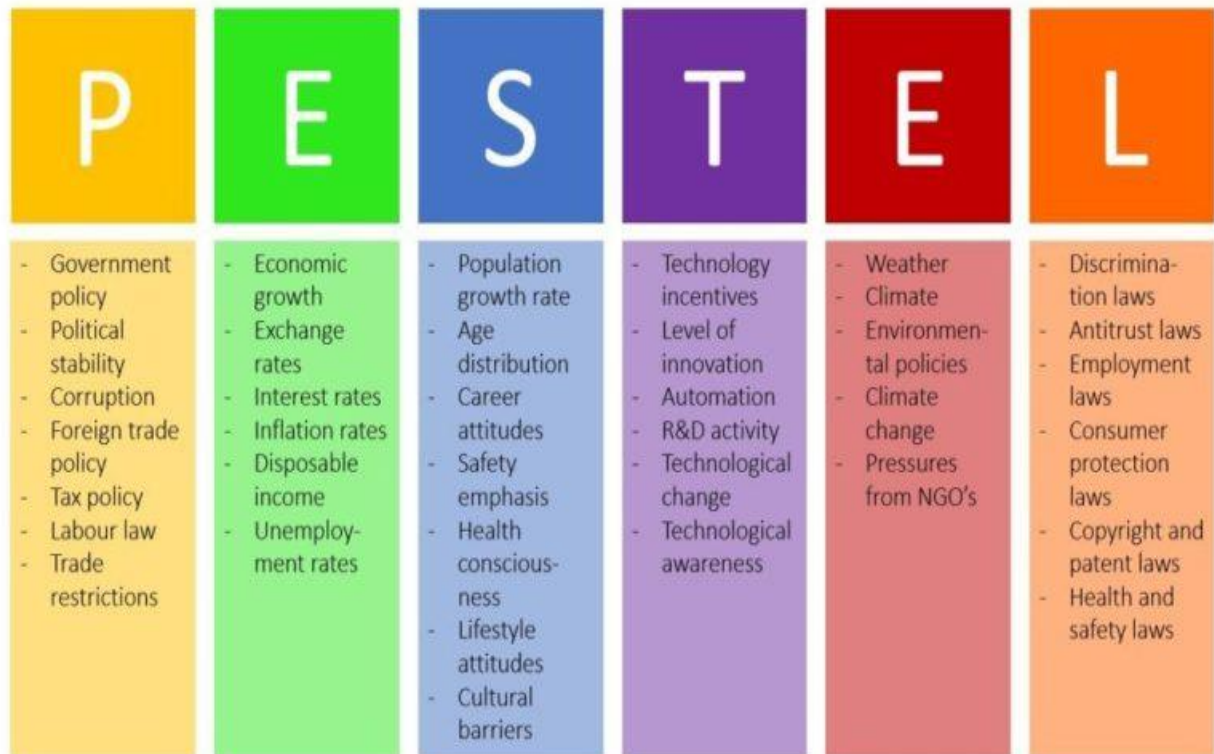


Figure 2.4: PESTEL analysis

Source: Adapted from Thompson et al. (2007)

➤ **Political factors**

These factors deal with political stability, corruption, labour laws, government policies and regulations and how much the government intervenes in the way companies conduct their businesses. Trade restrictions and foreign trade policies are also part of this element of PESTEL. In Zimbabwe for example, a foreign investor is required by the indigenisation and economic empowerment laws of the country to concede 51% of his invested capital to local entrepreneurs (Chidede and Warikandwa, 2017). The South African government on the other hand introduced the BBBEE policy where companies that are fully owned by non-blacks (whites and foreign nationals) are downgraded one level on their certificate, which usually makes them non-compliant and risk losing customers.

According to Rahman (2018), South Africa's political environment is mismanaged, protests are common and there is occasional violence and xenophobic attacks in the country. These will result in very slow economic growth and investing in such a country is therefore risky.

➤ **Economic Factors**

The next elements in the PESTEL analysis are the economic factors of a country since they impact directly on business operations and profitability (Rahman, 2018). Such factors are a country's interest rates, tax deadlines and tax percentages, overall economic growth, inflation and exchange rates. In South Africa for example, income tax is charged at 28% for companies, while individual employee tax is between 18% - 45% based on annual income (Rahman, 2018). It should also be noted that South Africa's economy shrank by about 3% in the first quarter of 2019 according to Stats SA. The country has also been experiencing hours of load shedding since 2018.

➤ **Social Factors**

Social factors include cultural beliefs and norms of the people, health choices, population growth rates, life expectancy, lifestyles and age distributions. These are important in order to understand specific customer demands and preferences (Rahman, 2018). South Africa, for example, has mixed races, 11 different languages that are all official and a total population of over 55 million at the end of 2018. (Rahman, 2018) states that the country also faces the challenge of many immigrants from other countries, causing a strain on the infrastructure of the country. Despite its challenges, South Africa still has the best infrastructure and technology on the continent, making it a good business destination.

➤ **Technological Factors**

The importance of technology, especially in manufacturing, was already discussed in previous sections. Ever-changing customer demands and the need to customise products and services means that manufacturing companies also need to have advanced technology. The fast rate at which technology changes also implies that

companies have to keep on changing and improving their internal processes, the way they deliver goods to customers and the way they sell their products (Rahman, 2018). An example is how companies have displaced recruitment agents by recruiting directly from social networks like LinkedIn. Online shopping platforms like Amazon, eBay and bidorbuy have also changed the way companies advertise, sell and deliver goods to customers (Rahman, 2018).

➤ **Environmental Factors**

The need to scan environmental factors has become important, especially for manufacturing companies that need to import raw materials or export finished goods. Conducting business in countries that often experience natural disasters like floods, storms, earthquakes and volcanos might prove very difficult. Over and above this, there might be government laws that regulate pollution (water, air, land); for example, the acquisition of raw materials like timber might be governed by the deforestation laws of the country (Rahman, 2018).

➤ **Legal Factors**

These could be health and safety laws, employment equity, consumer rights and labour laws. In South Africa for example, the government is trying to lure Foreign Direct Investment (FDI), yet foreign shareholding in some sectors like telecommunications, mining and insurance is restricted as in the case of Zimbabwe and as mentioned in the previous section. Other tax laws like the payment of Skills Development Levies (SDL) might be common in South Africa only and not in other countries.

ii) Analysis of the company

According to Pekkola (2013), the results of the PESTEL analysis must now be used to conduct a SWOT (strengths, weaknesses, opportunities and weaknesses) analysis. The purpose of a SWOT analysis is to assist a business to decide which strategies to pursue after having considered its strengths, weaknesses, opportunities and threats

(Thompson et al., 2007). As shown in Figure 2.5 below, strengths and weaknesses are internal factors, while opportunities and threats are external factors.

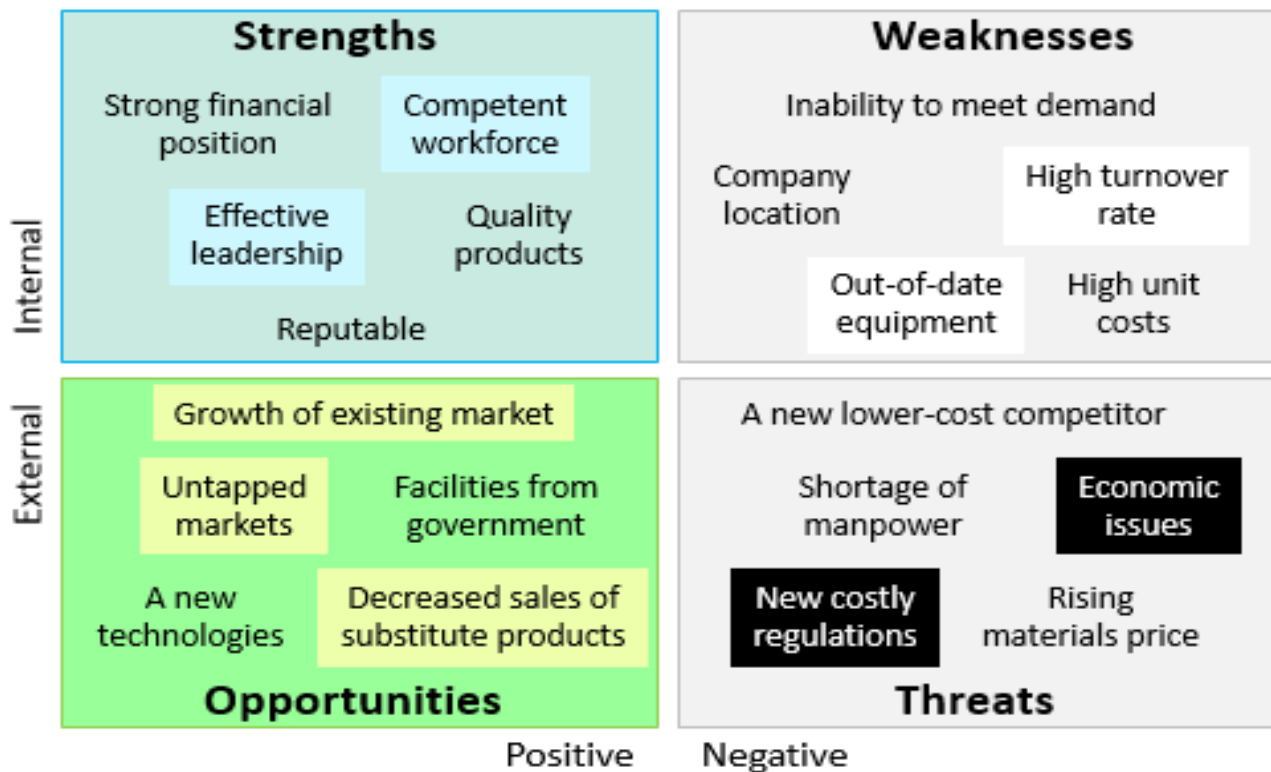


Figure 2.5: SWOT analysis

Source: Adapted from Thompson et al. (2007)

➤ **Strengths**

According to Thompson et al. (2007), strengths are the things a business does well or the resources a company has that competitors might lack strengths, as shown in the diagram above, could be a skilled and motivated workforce; management with good and effective leadership; good quality products (brand name); availability of capital for further investment; advanced technology; and satisfied and loyal customers.

➤ **Weaknesses**

These are also internal and are mainly the things the company is not doing well, the things it lacks, which the company can improve upon in order to meet its goals and objectives and therefore become competitive (Pekkola, 2013). Examples may be de-motivated employees (resulting in high staff turnover), outdated machinery,

inefficient internal processes, limited resources (capital), poor location of the business, inexperienced and unskilled employees.

➤ **Opportunities**

Opportunities are external factors which cannot be controlled by the company. However, (Pekkola, 2013) states that they are positive and attractive factors in the external environment which might assist in the business's success. From Figure 2.5 above, these could be new and advanced technology; the existence of new niche markets; customers losing interest in existing substitute products; possibilities of forming strategic alliances with suppliers and distributors; potential for beneficial mergers and growth in existing markets.

➤ **Threats**

Threats are also external to the company and might have a negative impact on the operations and profitability of the business (Thompson et al., 2007). Since these factors cause risk to the formulated strategies or to the company as a whole, it is vital to know what they are so that measures or contingency plans are put in place should they occur. Examples, as shown in the diagram above, are a new competitor who charges lower prices; new government policies, which might also be costly like BBBEE in the case of South Africa; changes in customer demands and preferences; an increase in electricity charges and load-shedding; and the introduction of cheap substitutes, for example Chinese goods that have flooded the African market.

iii) Definition of company strategy

Corporate strategy is formulated and defined by executive management so that goals and objectives can be set that give direction to the organisation's employees. However, as stated in Chapter 1, strategy has to be communicated from top to bottom so that it can be implemented effectively. Reddy (2018) defined a strategy as a ploy which is long-term in nature, used by a company to meet goals and

objectives and achieve its vision. When developing and formulating company strategy, Reddy (2018) suggested the following to be considered by a company:

➤ **Clear, long-term objectives**

Setting of specific goals and objectives for both short-term and long-term means that the objectives need to be realistic. The strategic plan should also state the products to be manufactured, the specific target market and customers and the production process involved to achieve these goals.

➤ **Identify opportunities**

The business should carefully analyse both internal strengths and weaknesses, then external opportunities and threats (SWOT analysis), before making final decisions to implement strategies.

➤ **Innovation**

Put in place product differentiation strategies (create a brand name). There is so much competition and customers want unique but good quality products.

➤ **Competition**

To remain competitive, a company must choose niche markets or under-serviced ones. It is also a good idea to penetrate new markets and position the company and brand in a way that new entrants find it difficult to penetrate.

➤ **Economies of scale**

Look for possibilities of economies of scale when buying raw materials. This helps reduce production costs so that the finished product is also sold to customers at lower prices than that of competitors.

➤ **Communicate with stakeholders**

When the strategic plan is finalised, it is important to communicate it to all employees, as well as how this relates to them and what changes might occur in the company if the strategy is implemented. External stakeholders like investors, customers and suppliers must also be informed about the new strategy and why the company wants to implement it, as well as how this will affect revenue and profits.

iv) Definition of manufacturing strategy

Manufacturing strategy has already been defined in section 2.5 above and it has been stated that it is derived from company strategy.

The Integrated Quality Management System (IQMS) (2017) suggested the following steps to defining a manufacturing strategy:

➤ **Setting clear and specific manufacturing objectives**

These objectives, according to IQMS (2017), are company goals that should be communicated and traceable throughout the organisation

➤ **Define metrics and KPIs**

Metrics and key performance indicators like throughput time, number of product defects, order cycle time and number of customer complaints can help an organisation develop a successful manufacturing strategy that is sustainable.

➤ **Introduce active change management**

By communicating and being transparent about the new strategy, employees become active participants in the change itself, which minimises potential resistance to change. Management must also give employees an opportunity to give their views and contribute to the company's success.

v) Identification of economic and technological constraints

Before the manufacturing strategy can be implemented, possible constraints have to be identified. For example, the lack of capital to invest and a lack of advanced technology for new innovations. However, these were already discussed in stage 2 above when the company analysis was conducted.

vi) Implementation

The next stage is to allocate resources so that implementation can take place. This stage involves functional managers as well as their subordinates. According to

Thompson et al (2007:20-35), this is the stage that faces many challenges and much resistance in companies. However, if a company communicated the strategy transparently and involved employees in the development stage, potential resistance is already minimised.

vii) Evaluation and feedback

The implemented strategies have to be evaluated to see if they fulfilled the purpose they were intended to fulfill. Strategies that did not work will be re-formulated. Feedback must also be given to employees and their sites or departments about how well the company performed.

2.6. Background to Performance Measurement and Management

According to Bititci et al. (2012:305-327), performance measurement was first introduced around the year 1494 when the double-entry bookkeeping system was introduced by Luca Pacioli. The business environment has changed drastically since the introduction of double-entry bookkeeping. The Industrial Revolution saw the introduction of improved production methods; once family-owned manufacturing companies expanded and became manufacturing plants with different sites and divisions (Bititci et al., 2012:305-327).

Major changes in the business environment also changed the industry's view on performance measurement. For example: the wage system where employees' wages were calculated based on their productivity. Companies that have more sites or plants now have to measure each site's performance and also do budgets per site. However, according to Bititci et al (2012:305-327), organisations have still just focused on financial performance as the main measure of organisational performance, with little or no attention being paid to customers, employees and other stakeholders' satisfaction. In agreement with Bititci et al. (2012:305-327), Gopal and Thakkar (2012:518-547) also stated that companies now need to understand that performance measurement does

not only have one dimension, but should be measured on other non-financial dimensions as well. According to Gopal and Thakkar (2012:518-547), performance measurement should be approached from a “balanced approach”, which includes financial and non-financial dimensions of performance. Taticchi et al. (2012a:41-54) further cited that, as businesses and their operations expanded, performance measurement also became more complex. Researchers started asking if maybe performance measurement needed to be aligned to strategy, while some scholars asked how such an alignment would be achieved (Taticchi et al., 2012a:41-54). Bititci et al. (2012:305-327) described a massive growth in performance measurement and management literature from the late eighties. Scholars who researched on this topic focused on all industries from manufacturing to service providers. Taticchi et al. (2012b:593-614) further cited an increase in performance research from the year 2007.

2.6.1 Traditional financially-based performance measures

Verweire and Van den Berghe (2004: 20) stated that usually, companies measure their achievement through financial performance. Up to this day, financial performance in the form of financials is the only information that is found on most company websites because most companies are required by different regulators, like the International Financial Reporting Standards (IRFS), to get audited and subsequently disclose their financial performance (Bititci et al., 2012:305-327). Verweire and Van den Berghe (2004) divided financial performance measures into two, namely:

- Those that are based on accounting information and
- Those that are based on values from the stock market (market-based)

2.6.2 Accounting-based performance measures

These, according to Verweire and Van den Berghe (2004: 20), focus only on how well the company is able to make profits. Peavler (2019) as cited on

www.thebalancesmb.com stated that companies usually measure performance by using different types of ratios as discussed below:

(i) Profitability Ratios

As stated above, these ratios mainly measure how well a company can make profits. Profitability is important to shareholders for return on investments by way of dividends and also for creditors for payment of debt. Below are the commonly used profitability ratios:

➤ **Net Profit Margin**

This ratio is expressed as a percentage of the company's revenue, as shown below:

$$\text{Net Profit Margin} = \text{Net Profit} \div \text{Net sales} \times 100$$

A higher percentage represents better performance, according to Peavler (2019). However, standard margins differ based on the industry.

➤ **Gross Profit Margin**

Gross Profit (GP), like Net Profit margin also indicates a company's profit, and this is calculated as:

$$\text{Gross Profit Margin} = \text{Gross Profit} \div \text{Net Sales} \times 100$$

Gross profit, however, does not include operating expenses like Net profit. However, a higher percentage is still preferable.

➤ **Return on Assets (ROA)**

ROA is an indicator of how efficiently and effectively a company utilises its assets. The ratio is calculated by comparing the profit generated by the company against the total value of assets used, as shown below:

$$\text{Return on Assets} = \text{Net Income} \div \text{Average Total Assets}$$

As with the previous ratios, a higher ROA ratio shows investors how efficient a company is in its business processes.

➤ **Return on Investment (ROI)**

This is one ratio that investors are also concerned about as it shows how effective a company has been in utilising the invested capital to generate profits. It reveals how much income was earned on investments.

$$\text{Return on Investment} = \text{Net Income} \div \text{Cost of investment}$$

Another reason provided by (Peavler, 2019) why this ratio is important to investors is that it reflects the company's ability to reward investors in the form of dividends, thereby attracting more investors, a higher ratio therefore means effective company performance.

➤ **Return on Equity (ROE)**

Jamaludin, Sihotangand and Saputro (2020:68-75) cited ROE as a measure of how well a company is able to utilise shareholders' invested funds effectively and efficiently to generate income. The ratio is calculated as shown below:

$$\text{Return on Equity (ROE)} = \text{Net Profit After Tax (NPAT)} \div \text{Equity}$$

A higher percentage in ROE is considered favourable.

(ii) Liquidity Ratios

These are used to measure how solvent a company is by comparing its current assets to current liabilities. The most popular liquidity ratios according to Peavler (2019) are current ratio and acid test / quick ratio as discussed below.

➤ **Current Ratio**

$$\text{Current Ratio} = \text{Current Assets} \div \text{Current Liabilities}$$

This is a measure of how much of a company's current liabilities can be paid from only current assets, should the current debt fall due. A ratio of 2 means a company can double its current liabilities should it sell all its cash assets. This ratio is considered good. However, Peavler (2019) suggested comparing with other firms within the same industries to get a better picture of how well competitors are doing.

➤ **Quick Ratio (Acid Test Ratio)**

The most liquid and easiest current assets to recover money from are cash and its equivalents, marketable securities and short-term debtors. This ratio only differs from the current ratio in that it does not take into account prepayments and inventory, which might take longer to dispose of.

$$\text{Quick Ratio} = (\text{Current assets} - \text{Inventory}) \div \text{Current liabilities}$$

An acid test ratio of 1 is considered good since it indicates that a company can cover all its current liabilities without having to sell its inventories. However, industry comparison is still encouraged.

(iii) Activity Ratios

Activity ratios are calculated in order to have an indication of how efficient and effective a company uses both its current and fixed assets in its operations. The most popular activity ratios are discussed below.

➤ **Total Asset Turnover**

This is an assessment of how effective a company is in generating income by efficiently using its assets. The calculation is as follows:

$$\text{Total Asset Turnover} = \text{Net Sales} \div \text{Average Total Assets}$$

A high asset turnover ratio signals a company's effectiveness in managing and utilising its assets to generate high revenue.

➤ **Working Capital Turnover (Sales to Working Capital)**

This ratio also indicates a company's liquidity status, as much as it is an activity ratio.

$$\text{Sales to Working Capital} = \text{Sales} \div \text{Average Working Capital}$$

If this ratio is high, it means management effectively and efficiently managed working capital profitably to produce income.

➤ **Accounts Receivable Turnover**

This ratio measures the number of times receivables can be converted to cash, indicating how liquid a company's debtors are.

$$\text{Accounts Receivable Turnover (Times)} = \text{Net Sales} \div \text{Average Net Receivables}$$

Or

$$\text{Average Collection Period (Accounts Receivable Turnover in Days)} = 360 \div \text{Accounts Receivable Turnover (Times)}$$

➤ **Accounts payable turnover (Creditors Days)**

This ratio, as opposed to debtor days, is used to calculate how many times in each year a company has paid its creditors.

$$\text{Accounts payable turnover (Times)} = \text{Cost of goods sold} \div \text{Accounts payable}$$

➤ **Days Payable Outstanding**

Day payable outstanding is an indicator of how many days a company takes to pay suppliers (creditors).

$$\text{Days Payable Outstanding} = \text{Accounts payable} \div \text{Average daily cost of sales}$$

A healthier situation is to have less debtor days compared to creditors days. However, if supplier terms are for example 60 days while the company takes 120 days to pay, this might signal the company's inability to meet its obligations (Peavler, 2019).

➤ **Inventory turnover (Days Inventory Outstanding)**

These are the number of days taken by a company to convert inputs (stock) into revenue, calculated as follows:

$$\text{Inventory Turnover in Days} = \text{Average Inventory} \div \text{Cost of Goods Sold} \div 365$$

If a company has a low inventory turnover ratio, it is said to be more productive.

The above ratios as cited by Micheli and Manzoni (2010:465-476) just give the company and stakeholders an indication of past financial performance without giving an indication of how well the organisation performed overall in terms of the satisfaction of all its shareholders like customers, investors and employees.

2.6.3 Market-based performance measures

As opposed to account-based measures which reflect past performance, market based measures give an indication of net the present value of a company's future income (Peavler, 2019). The most commonly used market-based ratios according to Peavler (2019) are earnings per share and price-earnings ratio.

➤ **Earnings Per Share (EPS)**

The EPS ratio is a good indicator of how much a business makes in profit for each share it holds, illustrating the business's profitability. If the EPS ratio is high, it means a company is profitable and can pay dividends to shareholders. To get a good indication before investing in a company, investors usually compare the EPS ratio with that of companies in the same industry (Peavler, 2019).

$$\text{Earnings per share} = \text{Net income} - \text{Preferred dividends} / \text{Average outstanding shares}$$

➤ **Price-Earnings (P/E) Ratio**

This ratio reflects a firm's market share price against the earnings per share. The P/E ratio gives the company an indication of how much an investor would pay per unit currency, for example, a \$1 of its earnings (Peavler, 2019). The formula for P/E ratio is:

$$P/E = \text{Market price per share} / \text{Earnings per share}$$

Khan and Shah (2011) did a comparison of traditional and non-traditional measures as presented in the table below.

Table 2.6: Comparison of traditional and non-traditional performance measures

Traditional performance measure	Non-traditional performance measure
Based on outdated traditional accounting system	Based on company strategy
Mainly financial measures	Mainly non-financial measures
Intended for middle and high managers	Intended for all employees
Lagging metrics (weekly or monthly)	On-time metrics (hourly or daily)
Difficult, confusing and misleading	Simple, accurate and easy to use
Lead to employee frustration	Lead to employee satisfaction
Neglected at the shop floor	Frequently used at the shop floor
Have a fixed format	Have no fixed format (depends on needs)
Do not vary between locations	Vary between locations
Do not change over time	Change over time as the need change
Intended mainly for monitoring performance	Intended to improve performance
Not applicable for JIT, TQM, CRM, SRM	Applicable Hinders continuous improvement

Source: Khan and Shah (2011)

2.7. Summary

Chapter Two presented definitions and basic introductions to performance measurement, performance management, strategic management and strategic performance management, strategy formulation and manufacturing strategy.

Section 2.4 highlighted the latest challenges in the management of manufacturing companies; the need for manufacturing companies to have strategic performance measurement systems in place; the roles and benefits of performance measurement systems; while section 2.5 gave an outline of the manufacturing strategy. The chapter ended with a brief discussion of traditional PMSs and a historical development of performance measurement and management.

CHAPTER 3

THEORETICAL DEVELOPMENTS AND LITERATURE REVIEW

3.1. Introduction

As cited by Gimbert et al. (2010:477-497), performance measurement and its association with strategy has been a favourite topic amongst researchers. However, many researchers who have studied this subject have mainly just focused on PMSs as an organisation's means to implement strategy. They therefore did not look at PMSs as a means to also formulate, evaluate and re-formulate strategies, as well as to cascade the formulated strategy to all employees for improved organisational performance. Moreover, scholars did not look at PMSs as possible tools to translate strategy into measurable goals and objectives. Chapter 3 analyses existing SPMMSs, their strengths and limitations, discusses strategic management and highlights its importance to performance measurement and overall organisation performance.

3.2. Performance Measures

Previous sections of this study have already highlighted the fact that performance measures can either be financial or non-financial in nature, while Micheli and Manzoni (2010: 465-476) pointed out the need for companies to connect their performance measures to long-term strategy. On the other hand, Gunasekaran and Kobu (2007:2819-2840), stated that performance measures must be company specific and according to these two authors, previous researchers have tried to generalise performance measures across different companies in different industries. Since metrics and targets are set based on the specific goals and objectives a company wants to achieve and also on its vision, Gunasekaran and Kobu (2007:2819-2840) stated that performance measures cannot therefore be generalised but should be

tailor-made for a specific industry or company. Wouters (2009:64-78), in agreement with Gunasekaran and Kobu (2007:2819-2840), cited the need for performance measures to emanate from a company's strategy, since different companies have different strategies based on the industries within which they operate. Wouters (2009:64-78) further advised companies to set measures that reflect their organisational structures and since company structures differ, performance measures can also not be shared between two different companies as they need to reflect the changes in structure. The requirements and guidelines of performance measures by different authors are summarised in the table below:

Table 3.1: Requirements and Guidelines for Performance Measures **Authors**

• Performance measures should be simple to understand	Kennerley and Neely (2003) and Braz <i>et al.</i> (2011)
• Performance measures should be derived from strategy	Neely <i>et al.</i> (2005), Micheli and Manzoni (2010)
• Performance measures should be relevant for employee remuneration	Meyer (2008)
• Performance measures should provide timely and accurate feedback	Micheli and Manzoni (2010)
• Performance measures should relate to specific goals (targets)	Micheli and Manzoni (2010)
• Performance measures should have a visual impact	Meyer (2008)
• Performance measures should be consistent	Meyer (2008)
• Performance measures should provide fast feedback	Micheli and Manzoni (2010)
• Performance measures should be based on explicitly defined formulae and data sources	Braz <i>et al.</i> (2011)
• Performance measures should be reported in a simple and consistent format	Micheli and Mura (2017)
• Performance measures should be precise – exact about what is being measured	Braz <i>et al.</i> (2011)
• Performance measures should be applicable throughout an organisation	Meyer (2008)

Source: Author's own: Based on literature review

Micheli and Mura (2017:423-443) highlighted the importance of taking into account diverse contextual impact factors when evaluating performance measures. According to these authors, the market is highly volatile and therefore companies need to set strategies that are flexible and can be altered as demands and requirements shift. The problems mentioned above, according to Melnyk et al. (2013:173-186), will not be resolved by current PMSs which rely largely on quantitative financial measures only. As a solution, Melnyk et al (2013:173-186) developed a performance matrix, containing only two dimensions: outcomes and solutions as shown and discussed below.

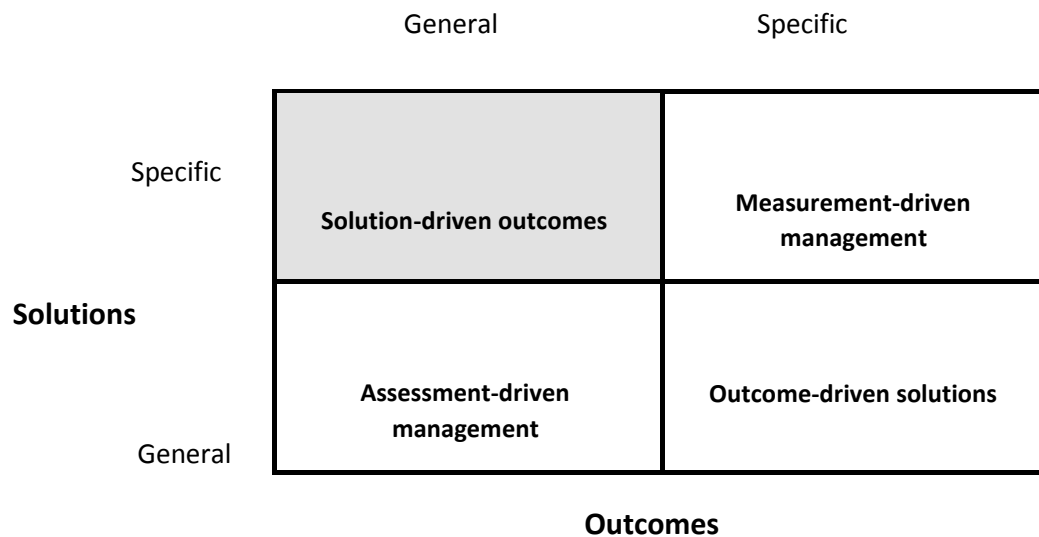


Figure 3.1: The Performance Alignment Matrix
Source: Melnyk et al. (2013)

The Performance Alignment Matrix above, according to Melnyk et al. (2013:173-186) is simple and flexible to use. The outcome dimension represents the desired results based on the vision and goals of the company. According to Melnyk et al. (2013:173-186), outcomes range in scale from being general (there is a broad understanding of what is to be achieved) to being specific (company knows exactly what they want to achieve) as shown in the diagram above. Solutions, on the other hand, are also rated on a scale that ranges from them being general to being specific (Melnyk et al., 2013:173-186). The specific solutions are those strategic approaches a company is

sure to adopt in order to achieve its outcomes. If solutions are general, (for example, we want to achieve operational excellence), the company will have more flexible options and approaches to adopt in order to achieve its outcomes (Melnyk et al., 2013:173-186)

Measurement-driven management: Melnyk et al. (2013:173-186) stated that a measurement-driven type of management is the purest and most specific form of measurement, which is conducted “after the fact”. In this case, actual performance is matched against the intended targets to determine whether objectives were met or not. However, this approach is only appropriate if the environment is stable.

Outcome-driven solutions: With this approach, goals and objectives are known, which means that the outcome is specific. However, the solutions to achieve these goals are general, as shown in the diagram above (Melnyk et al., 2013:173-186). The strategy the company adopts to achieve goals when using this approach is not critical. The important thing is that the desired outcome must be achieved. What management does in this case is specify the desired outcome and leave the employees to find the solution to achieve that outcome (Melnyk et al., 2013:173-186). The idea is not to set fixed strategic goals (outcomes) and strategic metrics (solutions), but rather to be flexible and at the end only select the solution that worked in achieving outcomes. When the best approach has been identified, Melnyk et al. (2013:173-186) suggest that the company can now ‘lock this approach’ and set specific metrics to be used in future.

3.2.1. Roles of Performance Measurement Systems

According to Micheli and Manzoni (2010:465-476), many firms consider PMSs as just tools to diagnose what has gone wrong in their business operations and as a means to correct the problem. Micheli and Manzoni (2010:465-476) and Franco-Santos et al. (2007) together identified nine roles that PMSs play, instead of just being diagnostic tools. These are presented by way of a diagram, as shown below:

		Franco-Santos <i>et al.</i> (2007)				
		Measure Performance	Manage Strategy	Communication	Influence Behaviour	Learning and Improvement
Micheli and Manzoni (2010)	The Diagnostic Role	X				X
	The Interactive Role		X	X		X
	Belief System			X	X	
	Boundary System			X	X	

Figure 3.2: Roles of PMSs:

Source: Based on perspectives by Micheli and Manzoni (2010) and Franco-Santos et al., (2007)

➤ **The diagnostic role – learning and improvement**

In this role, the PMS identifies the weaknesses and drawbacks of the existing business processes and set-up so that solutions are applied to those areas that need improvement (Micheli and Manzoni: 2010:465-476). From the diagram above, Franco-Santos et al. (2007) also elaborated the diagnostic role of PMSs in promoting organisational learning and development.

➤ **Interactive role – communication and management of strategy**

While Micheli and Manzoni (2010:465-476) cited the interactive role of PMSs in bringing the organisation to work together, Franco-Santos et al (2007) also elaborated that as an integrative tool, the PMS assists an organisation to manage and communicate its strategy, vision and objectives with important stakeholders like employees, customers, investors and suppliers. As a strategic management tool, a PMS will be the supporting tool for emergent strategies

while also being a tool for evaluating the implemented strategies (Franco-Santos et al., 2007).

➤ **Belief system – communicate and influence behaviour**

The belief system (culture) of an organisation can be communicated throughout the organisation by using a PMS. An organisation can do this by being transparent and communicating strategies, goals and objectives. This translates into a culture of honesty and openness throughout the organisation. It also creates a sense of belonging amongst employees if they are being consulted, informed and involved in processes that matter to the business (Micheli and Manzoni, 2010:465-476 and Franco-Santos et al., (2007).

➤ **Boundary system – communicate and influence behavior**

According to Micheli and Manzoni (2010:465-476), this is the last role of a performance measurement system, involving an organisation allowing freedom and flexibility in the organisation while at the same time putting some form of control and limits. Franco-Santos et al. (2007) also expand upon this role of PMSs in setting boundaries that should be communicated to influence the behaviour of all employees. An example of this role would be to use PMSs to communicate goals related to transparency, on not accepting bribes, both as an organisation and as individual employees.

In agreement with Micheli and Manzoni (2010:465-476) and Franco-Santos et al. (2007), Pinheiro de Lima, Gouvea da Costa and Angelis (2008:108-132) pointed out that for a company to successfully define its capabilities and functions, management must first understand the PMS roles as discussed above. In doing this, the strategic management system is well supported.

Phusavat, Anussornnitisarn, Helo and Dwight (2009:646-664) also highlighted the importance of PMSs in establishing associations and cause-effect links between

strategy and selected performance measures. This means that performance measures, as briefly discussed in Chapter 2, must be derived from company strategy. Tan and Platts (2009:610-619) expanded that it is also important for a company to carefully study the structure and characteristics of these causal associations mentioned above.

Pinheiro de Lima et al. (2008:108-132) conducted a study where they consolidated all the roles of PMSs that are strategic in nature (SPMSs), which had been previously identified by different scholars. Their study concluded that PMSs perform an array of roles in organisations, from assisting in strategic management to goal-setting and the evaluation of performance to providing feedback. These roles, which Pinheiro de Lima et al. (2008: 108-132) are summarised in the table below.

Table 3.2: Strategic performance measurement system roles

Role	Perspective	Author
Produce a positive change in organisational culture, systems and processes in order to contribute to the strategic vision realization	Strategic PMS definition	Li and Tang (2009), Phusavat et al. (2009), (2006), Bourne et al. (2005), Neely (2005),
Performance measurement system should provide a closer understanding of customer needs, in order to create a perceived value for customers	Customer driven strategy	Molina-Castillo and Munuera-Alema'n (2009, Neely et, al.(2005), Bourne etal.(2005), Kennerley and Neely (2003), Neely et,al.(2002),
Implement strategic management functionality in the strategic operations management system, providing the system with the jointly improvement of operational efficiency and overall business effectiveness	Strategic management function	Taticchi and Balachandran (2008), Kling (2006), Henry (2006), Neely (2005), Bourne (2005), Gomes et al. (2004)

Develop a continuous improvement capability through implementation and management of an integrated operations strategic management system	Continuous improvement capability development	Li and Tang (2009), Alegre and Chiva (2008), Wu and Chen (2006), Kling (2006), Neely (2005), Gomes et al. (2004), Kennerley and Neely (2003),
Ensure that the performance management system covers long, medium and short term perspectives	Life cycle orientation for performance system design	Molina-Castillo and Munuera-Alemán (2009), Henry (2006), Neely et al.(2005), Chenhall (2005), Bourne et al.(2005), Flynn and Flynn(2004)
PMS results of measures definitions and performance framework recommendations	The systemic and hierarchical approach	Pinheiro de Lima et al. (2008), Folan et al. (2007), Binder and Clegg (2007), Gargeya (2005), Folan and Browne (2005), Gomes et al. (2004)
Performance responsible for articulating strategy and monitoring business results	Strategy realization through the monitoring of the organization's results	Pinheiro de Lima et al. (2008), Colledani and Tolio (2009), Neely et al. (2005), Gomes et al. (2004)
Measurement of business results implemented using financial and non-financial aspects of business performance	Financial and nonfinancial nature of the organization's performance	Verbeeten and Boons (2009), Gomes et al. (2004), Neely et al. (2002)

Source: Pinheiro de Lima et al., 2008)

3.3. Strategic performance measurement and management systems (SPMMSs)

Strategic performance measurement and management systems (SPMMSs) were defined in Chapter 2. Garengo, Biazzo and Bititci (2005:25-47) in agreement with Gao, Durub, Bulut and Yoshida (2013:3-28) cited that besides covering financial and non-

financial aspects of the business, SPMMSs can also be used for both long and short-term goals.

SPMMSs also assist managers in making informed decisions since they are used to gather, process and analyse information about organisational performance, which can be presented in easy to understand formats like graphs (Gimbert et al., 2010:477-497).

According to SPMS definitions in Chapter 2, they should contain measures for both strategic and operational effectiveness (Gimbert et al., 2010), although according to Gunasekaran and Kobu (2007:2819-2840), existing PMSs only focus on measures of operational processes which, as pointed out by Franco-Santos et al (2007), fail to execute strategies.

Franco-Santos et al. (2007) also pointed out the need for companies to view performance measurement from a strategic point of view, that is, a process which effectively cascades goals, measures and objectives from top to bottom so that strategy can be implemented.

Considering the above, Franco-Santos et al., (2007) therefore defined a SPMS as a management tool used to trace the success of the formulated long-term strategies, which also needs to be updated periodically or as and when strategies change. After defining a SPMS, the same authors then defined a SPMMS as a system used by organisations to design, develop, communicate and implement a SPMS.

3.3.1. Guidelines for SPMMSs

Since it has been noted from a review of previous literature on performance measurement and management that many scholars have used the phrases: performance measurement system (PMS), performance measurement and management system (PMMS) and strategic performance and management system (SPMMS) to mean the same, the general guidelines and requirements for each of the systems can also be applied to the other (Dossi and Patelli, 2010:498-526). The assumption as explained by Franco-Santos et al. (2007) above, is that, a PMS is a

component of a PMMS, while a SPMMS is another type of a PMMS: the difference being that it is more strategic and integrated than an ordinary PMMS (Dossi and Patelli, 2010:498-526). This is also evidenced by the different definitions for the three given by different authors, for example, an author's definition of PMMS might be viewed as the definition of a PMS by another author (Dossi and Patelli, 2010:498-526). Different scholars have therefore given different guidelines and recommendations for PMMSs and some for SPMMSs. These guidelines from different authors, gathered from literature review will be summarised in table 3.3 below.

Table 3.3: List of general requirements and guidelines for SPMMS:

General guidelines	Authors
<ul style="list-style-type: none"> SPMMS should be based upon the strategic role of the company and company strategy and objectives 	Kennerley and Neely (2003), Akyuz and Erkan (2010)
<ul style="list-style-type: none"> SPMMS should be implemented as means of articulating strategy and monitoring organisation results 	Gomes et al. (2011)
<ul style="list-style-type: none"> SPMMS should reflect the structure of an organisation 	Demartini (2014)
<ul style="list-style-type: none"> Measurements on a SPMMS should be easy to understand by those being evaluated 	Gomes et al. (2011)
<ul style="list-style-type: none"> SPMMS measures should be relevant for employee remuneration 	Meyer (2008)
<ul style="list-style-type: none"> SPMMS should reveal how effectively customers' needs and expectations are satisfied 	Farris, van Aken, Letens, Chearksul and Coleman (2011)
<ul style="list-style-type: none"> SPMMS should provide measures that allow all members of the organisation to understand how they affect the entire business 	Farris et al. (2011)
<ul style="list-style-type: none"> SPMMS should include both financial and non-financial performance measures (financial, customer, internal processes, learning, growth and development) 	Gomes et al. (2011)
<ul style="list-style-type: none"> SPMMS should be designed with specific and explicit metrics, targets, goals and objectives 	Farris et al (2011)
<ul style="list-style-type: none"> In a SPMMS, suppliers should be evaluated upon quality and delivery performance 	Gopal and Thakkar (2012)
<ul style="list-style-type: none"> SPMMS data should be available to every employee for constant review 	Gopal and Thakkar (2012)
<ul style="list-style-type: none"> PMMS should focus upon measures that customers can see 	Janssen, Möller and Marten (2011)

<ul style="list-style-type: none"> SPMMS should be viewed as a means of continuous organisational improvement. 	Gomes <i>et al.</i> (2004)
<ul style="list-style-type: none"> Feedback from SPMMS should be reported at numerous levels of the organisation 	Micheli and Manzoni (2010)
<ul style="list-style-type: none"> Performance measures in a SPMMS should be visible to everyone involved 	Braz <i>et al.</i> (2011)
<ul style="list-style-type: none"> A SPMMS should differentiate between strategic, tactic and operational levels of an organisation 	Gunasekaran and Kobu (2007) and Akyuz and Erkan (2010)
<ul style="list-style-type: none"> Graphs should be the primary method of reporting performance data in a SPMMS 	Gopal and Thakkar (2012)
<ul style="list-style-type: none"> Data in a SPMMS should be collected, where possible, by those whose performance is being evaluated 	Gopal and Thakkar (2012)
<ul style="list-style-type: none"> SPMMS should measure the entire product delivery system from the supplier to the customer 	Lockamy (2004), Gomes <i>et al.</i> (2011)
<ul style="list-style-type: none"> SPMMS should be designed so that it can facilitate auditing 	Farris <i>et al.</i> (2011)
<ul style="list-style-type: none"> A SPMMS and its processes should involve all employees. 	Pun and White (2005)
<ul style="list-style-type: none"> A SPMMS should link strategy to department, team and individual goals 	Bourne, Neely, Mills and Platts (2003)
<ul style="list-style-type: none"> A SPMMS should clearly set the incentives for the fulfilment of objectives 	Franco-Santos and Bourne (2005)
<ul style="list-style-type: none"> A SPMMS and all its processes should be supported by all employees from top to bottom 	Franco-Santos and Bourne (2005) and Pun and White (2005)
<ul style="list-style-type: none"> Results from a SPMMS and its process should be communicated openly to all employees 	Franco-Santos and Bourne (2005)
<ul style="list-style-type: none"> A SPMMS should identify the vision and mission of an organisation and communicate these to every employee 	Möller <i>et al.</i> (2011)
<ul style="list-style-type: none"> SPMMS should be viewed as a means of continuous organisational improvement. 	Gomes <i>et al.</i> (2004)

Source: Researcher's own: based on literature from different authors

However, Gomes et al. (2011:5-30), suggested that since the guidelines and requirements for PMMSs and hence SPMMSs are too extensive to be incorporated when developing a SPMMS, an organisation should therefore use those requirements that it would want to implement and measure.

3.4. An overview of existing SPMMS

As already discussed in the previous section, performance measurement has considerably evolved. It was identified first by Kaplan and Norton (2005:1-11) that since traditional PMSs only focus on financial performance, they are not suitable to assist managers in strategic decision-making. Kaplan and Norton (2008:75-85) also pointed out that since these traditional PMSs focus on past performance, the measures in them are also based on the past, making it difficult to measure performance across the organisation. This is mainly because they provide very little information on the underlying problems.

After looking at existing PMSs from a manufacturing perspective, Gomes et al. (2011:5-30) pointed out that their set-up is not conducive for innovation because they are rigid and only focus on one dimension: financial measurement and performance. These PMSs also create problems when a company wants to implement new initiatives like just-in-time as they do not have enough information on other perspectives, like the measurement of production. Pekkola, (2013) concluded that modern manufacturing processes require PMSs that are strategic and that integrate all aspects of the business's operations, including efficient internal processes. This requirement is not being met by existing PMSs, which are failing to assist organisations in achieving service excellence and organisational effectiveness (Pekkola, 2013).

3.5. Analysis of different types of SPMMS

Since the topic on PMSs has been very popular with researchers, this also means that a reasonable number of PMSs and SPMMSs have been developed over the years. The developed PMSs differ in that some only focused on specific sectors of the economy, some on the public sector, while some focused on all organisations (Micheli and Manzoni, 2010:465-476). A number of authors have discussed and reviewed some of the existing PMSs and these, although they do not fulfill some of the requirements of a SPMMS, will be discussed in detail below due to their contribution to performance measurement literature.

3.5.1. Tableau de Bord

Neely et al. (2008) postulated that in a Tableau de Bord system, which was developed in France, a company sets measures that are used to monitor the performance of the business. The company starts by first setting goals and then measuring performance against the set goals. This PMS is not used as the same document that is used throughout the organisation. Instead, each site or business unit will have its own Tableau de Bord based on the site's specific roles and responsibilities (Neely et al., 2008).

At each level of the organisation there is also a Tableau de Bord with performance measures to assist the manager to: a) evaluate his subordinates' and department's performance; b) give performance feedback to his superiors; and c) inform other stakeholders at his level about performance (Neely et al., 2008).

A Tableau de Bord does not contain pre-defined measures and dimensions, therefore, there is no guide for managers to use when developing their own PMS and measures. The Tableau does not allow for importation of custom visuals, which means visuals have to be recreated every time, instead of being imported. Its parameters are static and always single value, which means when data gets changed, the parameters need to be updated manually. For these reasons, the Tableau de Bord's popularity never extended beyond France (Neely et al., 2008)

3.5.2. The SMART Pyramid

Like the Tableau de Bord mentioned above, The Strategic Management and Report Technique (SMART) Pyramid is also a hierarchical PMS. The SMART Pyramid was developed by Lynch and Cross in 1988. Carr and Nanni (2009) mentioned that the SMART Pyramid operates at four levels in the organisation and its main purpose is to link strategy to operations. The distinct organisational pyramid is shown in Figure 3.3.

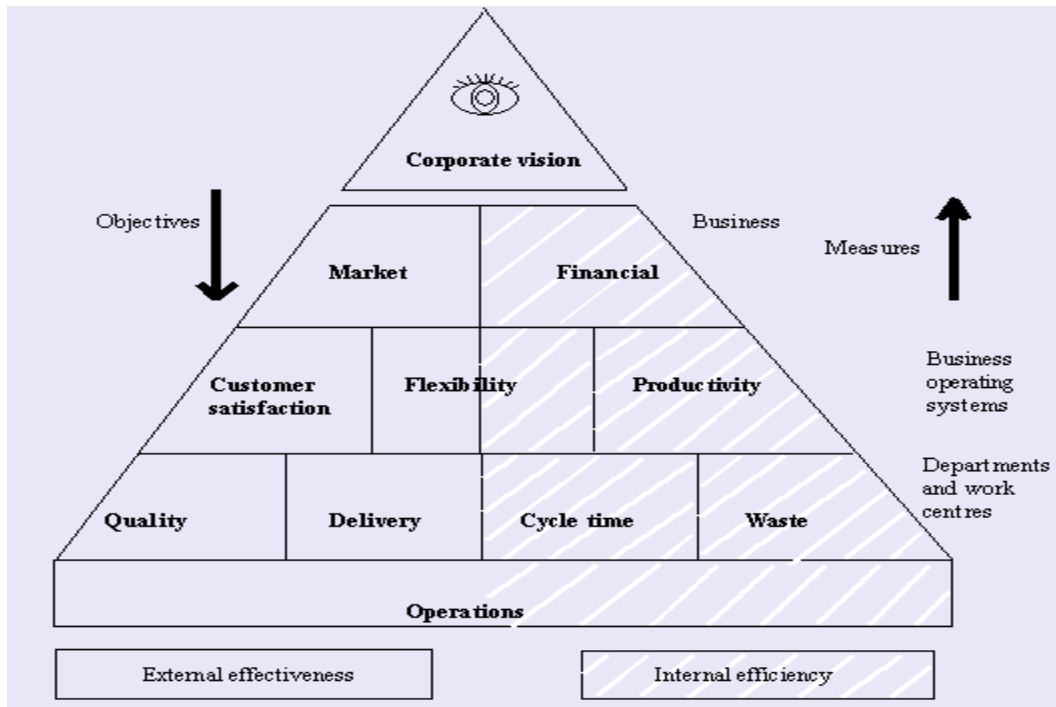


Figure 3.3: The SMART Pyramid
Source: Adapted from Lynch and Cross (1991)

Lynch and Cross (1991), cited on www.accaglobal.com, stated that the performance pyramid was derived from the fact that each organisation has different hierarchical levels, each having different responsibilities and focus. It should be noted, however, that these levels are interconnected and should therefore support each other. In this way, the pyramid enables the organisation to link its strategy to business operations.

The two authors, Lynch and Cross (1991) suggested that an organisation measures its performance across the nine dimensions shown in Figure 3.3. According to Lynch and Cross (1991), as cited on www.accaglobal.com, the main aim of the SMART Pyramid is to tie together the hierarchical view of business performance measurement with the business process review.

The authors concluded that it was important that organisations' PMSs fulfil the following functions:

- i) The adopted chosen performance measures should connect business operations with company strategy and goals. Individual departments and teams should be made aware of how their performance impacts the achievement goals;
- ii) Measures should incorporate financial and non-financial information; and
- iii) The PMS should enable the organisation to focus on business operations based on the demands placed on it by customers.

From the explanations and diagram of the SMART pyramid above, it can be noted that this PMS only focuses on satisfying two stakeholders, the customer (market) and the shareholder (productivity and financial excellence), and it ignores other shareholders such as employees and suppliers. It also fails to provide a mechanism to identify key performance indicators and it does not explicitly integrate continuous development.

3.5.3. Performance Measurement Matrix

Khan and Shah (2011) cited the Performance Measurement Matrix (PMM) as one of the early frameworks of performance measurement systems and also the first one to be accepted as an integrated PMS with balanced performance measures. It was developed in 1989 by three researchers: Keegan, Eiler and Jones. The PMM identified four different dimensions of performance measures: a) cost, b) non-cost, c) internal and d) external, as shown in Figure 3.4 below.

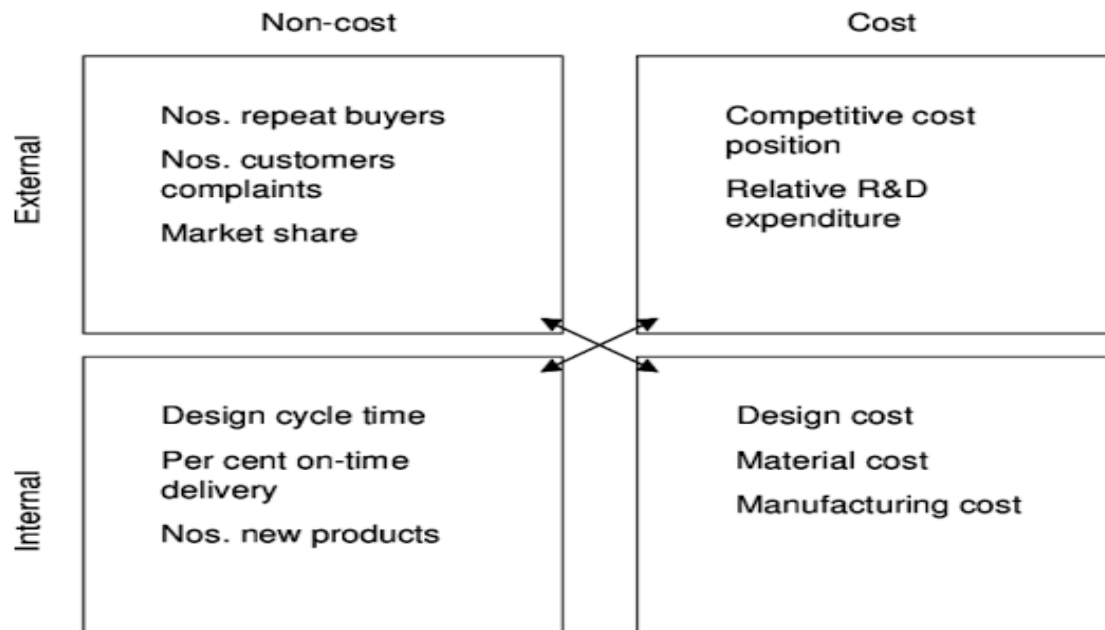


Figure 3.4: Performance Measurement Matrix
 Source: Keegan et al (1989)

Keegan et al. (1989:45-50) were of the opinion that since the structure of the PMM is based on multi-dimension performance measures, all stakeholder needs are addressed. Moreover, Khan and Shah (2011) pointed out that since the performance matrix does not establish the actual dimensions an organisation must operate in but rather the performance measures that the company needs to incorporate in those dimensions, this makes it a flexible PMS which can be adopted by any type of organisation. However, Khan and Shah (2011) also described this as the weakness of the matrix because not only does it fail to give proper guidelines to companies wanting to have properly defined performance perspectives and their measures, but it also fails to clearly define the links between performance dimensions.

The Performance Measurement Matrix does not include two most important stakeholders, customers and human resources as dimensions of performance, which makes it fail to give a truly balanced view of performance. It also fails to give an explicit process for the development of the performance measurement model.

3.5.4. The EFQM Excellence Model

According to an article by EFQM released in August 2018 and cited on their website, EFQM.org, the Excellence Framework was created in 1988 by executives from fourteen companies based in Europe. When it was first created, the leaders named it the European Foundation for Quality Management, which they later renamed EFQM. The model enables companies to improve organisational performance by first assessing where they are in their journey to success, identify and understand shortcomings and at the same time provide solutions to the identified gaps (Webster, 2018:3).

The EFQM can be presented by way of a diagram as shown below:

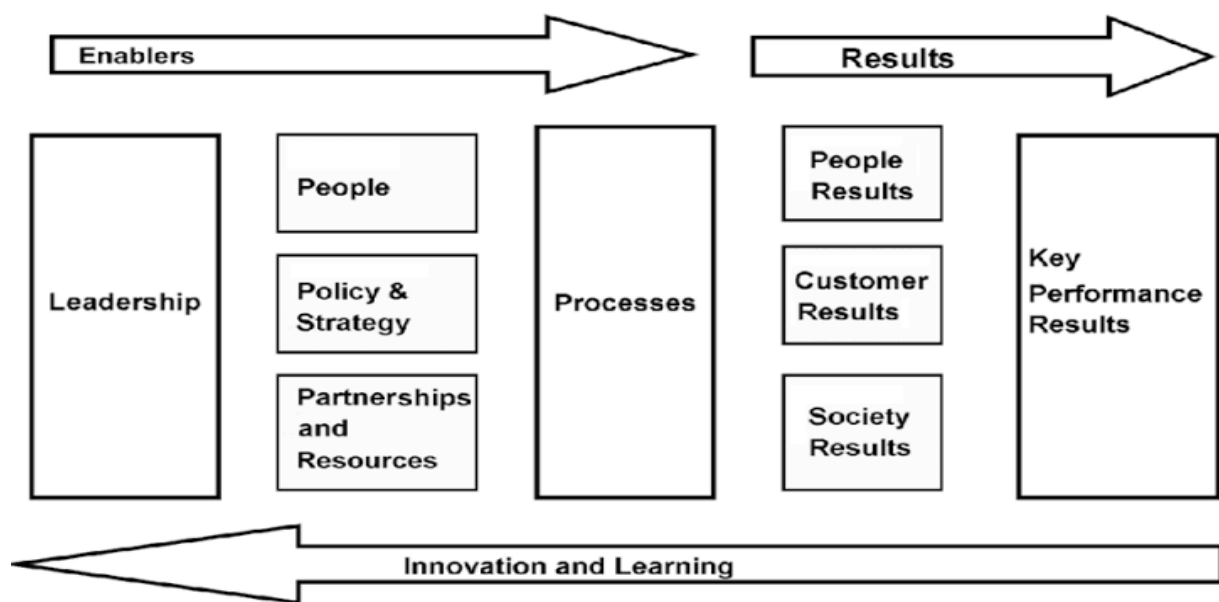


Figure 3.5A: The EFQM Excellence model

Source: EFQM (2012)

According to Webster (2018:3) and as shown in Figure 3.5A, the starting point for an organisation is to identify what it is that will enable it to achieve its key performance results, which the EFQM named 'Enablers'. Enablers are discussed in detail as follows:

i) Performance Enablers

➤ Leadership

The responsibilities of leaders as pointed out by Webster (2018:3) are to ensure value addition and delivery to all the firm's stakeholders by: a) formulating strategies and ensuring effective implementation of those strategies b) Making sure that business processes and systems are effectively and efficiently managed and improved whenever necessary, and c) Identifying training needs and encouraging continuous development.

➤ Capabilities

Leaders need to identify the resources necessary to achieve key performance results (the capabilities). Strategy implementation is only possible if capabilities are effectively and efficiently managed, understood, motivated, developed and enhanced when necessary (Webster, 2018). Capabilities, from the figure above, would be the people (human resource), infrastructure, equipment, suppliers, technology and information systems and even the business processes themselves.

ii) Performance measurement

A business would need to put systems in place and identify how performance will be monitored, measured, recorded and reported by establishing performance measures in all dimensions.

iii) Performance Results

According to Weber (2018:3), a good score in customer satisfaction is an indication of efficiency and effectiveness in business processes and resource management.

The EFQM, in an article released by Webster in October 2018, also stated that they were subjecting the EFQM Excellence model to a 'more fundamental review' after having used the initial model for 30 years. The management at EFQM suggested that

there was a need to move from a 'management excellence model' to a 'performance excellence model', one that focuses mainly on performance excellence (Webster 2018:3). The name for the new model will be the 'EFQM Performance Excellence Model 2020' and it will focus on satisfying all stakeholders: customers, employees, investors, suppliers and regulatory bodies, as well as the community as a whole. The main aspects of the new model are shown in Figure 3.5B below.



Figure 3.5B: EFQM Performance Excellence Model 2020

Source: EFQM (2018)

Since there is no systematic setting and achieving of goals, the EFQM cannot be used as a strategic management tool, which means it also cannot be used to implement strategy. The EFQM also lacks as a SPMS because it does not give guidelines on how an organisation should design and conduct performance measurement.

3.5.5. The Performance Prism

Chartered Global Management Accountants (CGMA, 2013) cited that the Performance Prism (PP) was developed in 2002 by Neely, Adams and Kennerley. According to CGMA (2013), the PP is distinct from other PMSs in that it does not start by formulating strategy, but rather by identifying stakeholders (CGMA 2013). Important to note as well is the fact that the PP places more emphasis on the mutual relationship between a firm and its stakeholders, instead of just trying to satisfy stakeholders.

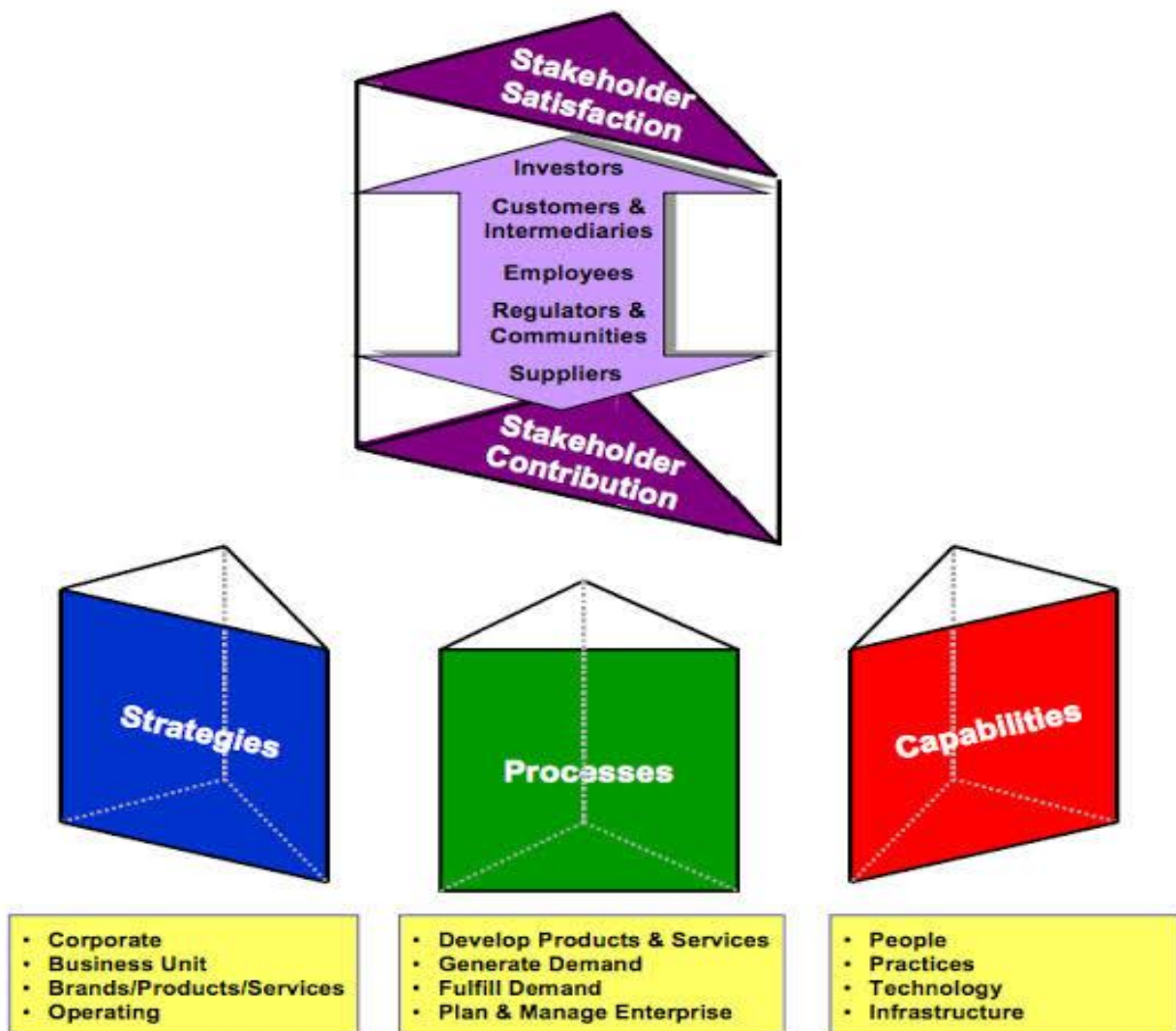


Figure 3.6: The performance prism

Source: Adapted from Neely et al. (2008)

Five questions are asked before strategy formulation: i) what do our stakeholders need from us and who are they? ii) which strategies should we employ in order to satisfy our stakeholders' needs, iii) which internal business processes should we use so that these strategies are executed? iv) what resources and capabilities are needed in order to carry out these business processes efficiently and effectively? and v) what do we want and need from our stakeholders if we are to develop and maintain these capabilities? (CGMA: 2013). Specific guidelines were provided by CGMA (2013) when developing a performance prism:

Table 3.4: Performance Prism-Actions to take and to avoid

Actions to take / Dos	Actions to Avoid / Don'ts
<ul style="list-style-type: none"> • Start with stakeholders, not with strategies • Understand not only what stakeholders want from you, but what their contribution is to the organisation – such as financing from investors, and talent, energy and commitment from employees • Develop measures specific to the processes and capabilities necessary to meet the needs of each stakeholder 	<ul style="list-style-type: none"> • Don't forget about the interests of regulators and communities • Do not ignore the reciprocal relationship between the organisation and its stakeholders • Never underestimate the importance of capabilities – the people, practices, technology and infrastructure necessary to support key processes • Don't use the Performance Prism in small or very simple organisations

Source: CGMA (2013)

Although the Performance Prism includes some stakeholders who are usually neglected by other PMSs discussed above such as employees, suppliers, alliance partners and intermediaries, it does not state how performance measures will be implemented. There is also an insufficient link between drivers of performance and results.

3.6. An overview on strategy and organisational performance

3.6.1. Strategy

Strategy has already been defined by many authors, as discussed in Chapter 2. However, since the popularity of the topic amongst researchers has already been emphasised at the beginning of the study, more definitions will be provided in this section. Stevenson (2012) defined strategy as a process that determines a firm's goals and objectives, an action plan and effective resource allocation necessary for executing the set goals. Thompson and Strickland (2007) also gave their own definition by describing a strategy as consisting of a combination of a company's competitive ploy and moves and the adopted business strategies that managers utilise to satisfy customers, gain a competitive advantage, conduct internal business processes and achieve organisational effectiveness. Pearce and Robinson (2013) further defined strategy as management's future plan on how to operate effectively within the competitive environment and achieve organisational objectives. These definitions highlight the importance of strategy as senior management's responsibility, with all the other areas of an organisation's operations stemming from it. A strategy, according to Oyedijo (2013), is usually long-term in nature, is based on vision and is driven by a company's desire to gain competitive advantage and achieve organisational effectiveness. According to Oyedijo (2013), there are a number of benefits for an organisation that develops and effectively implements strategy. These benefits, according to Oyedijo (2013), are based on the following facts about a strategy:

- Strategy clarifies what the company wants to achieve and the path that needs to be followed to achieve goals, thereby providing management with a guide;
- An appraisal in the form of a SWOT (Strengths, Weaknesses, Opportunities and Threats) can be facilitated by a strategy as it directs the changes of an organisation with the ever-evolving environment. Strategy therefore enables proactivity in a dynamic environment;

- It facilitates the proper and efficient allocation of resources based on priority of opportunities identified by the appraisal process; and
- When a strategy has been formulated, individual goals and responsibilities are clarified and employees are motivated by the unified commitment to achieve the goals and objectives of their organisations.

Pearce and Robinson (2013) pointed out that a business or organisation normally considers three strategic levels. *Corporate strategy* is at the top and it describes a company's attitude towards growth, the company's vision, mission, the overall direction being taken, how it manages its internal business processes and product lines. Corporate strategy ensures a firm's growth, stability and possibilities. *Business Strategy* is next on the hierarchy, dealing with ways of improving product or service market share and placing such product or service at a competitive position in the industry. At the lowest level is the *Functional Strategy*, which is mainly concerned with achieving and maintaining a competitive advantage for a business unit or the company as a whole. Pearce and Robinson (2013) further illustrated the three levels of strategy in organisations by way of a diagram, as shown below:



Figure 3.7: Levels of strategy in organisations

Source: Adapted from Pearce and Robinson (2013).

3.6.2. Strategic management: From mission and vision to strategy and action

As globalisation intensified, the study of strategic management also caught the attention of more researchers. To compete successfully in such a competitive and dynamic business environment, companies continually formulate and (re) formulate strategies, are more innovative, improve product quality, improve internal business processes and are more efficient in production to improve customer satisfaction (Khan, 2013). Strategic management can therefore be summarised as a process of coordinating, planning and decision-making by senior management so that the company achieves its set goals and objectives. Senior managers are therefore required to effectively allocate resources in such a manner that aides the intended strategies to be realised, otherwise a good strategy becomes meaningless if only formulated but not implemented (Wheelen and Hunger, 2007). Due to increasing globalisation, strategic management has also increasingly become a vital tool for organisations to track international trends and developments and also to position the organisation for a lasting competitive advantage (Wheelen and Hunger 2007). In both developed and developing countries, much research has been carried out on strategic management in the form of books, journals and articles. However, in Africa and therefore South Africa as well, there is limited literature and empirical research findings on strategic management and its probable relationship with performance measurement and firm performance (Pekkola, 2013), which is what necessitated this study.

The current study aims to investigate the types of PMSs being used in KZN manufacturing companies; examine the way the companies conduct their strategic management processes; performance measurement and how each of these affect the companies' performance in terms of its operations, and also determine the impact of strategic performance measurement improves a firm's overall performance. It is the researcher's hope, therefore, that South Africa as a developing nation would benefit from the quantitative and qualitative evidence and findings from this study and that such findings and information would also add to existing literature on strategy, performance measurement and organisational performance. According to Thompson et al. (2007:19-20), strategic management should be regarded as a process used by

managers to define the long-term direction of their organisations; establish performance measures; and fulfil its vision by setting specific performance goals and objectives; formulating strategies to achieve the objectives and ensuring that the chosen strategies are carefully executed. This definition views strategic management as a continuous process set out to position an organisation for future prosperity.

Moreover, Verweire and Van den Berghe (2004:12) stated that strategic management is an on-going process which should be integrated into part of the performance management cycle to effectively communicate the organisation’s goals and objectives, support and motivate employees to be accountable for meeting both individual and departmental goals; and then measure and evaluate individual, departmental and organisational performance. The strategic management process is summarised below.

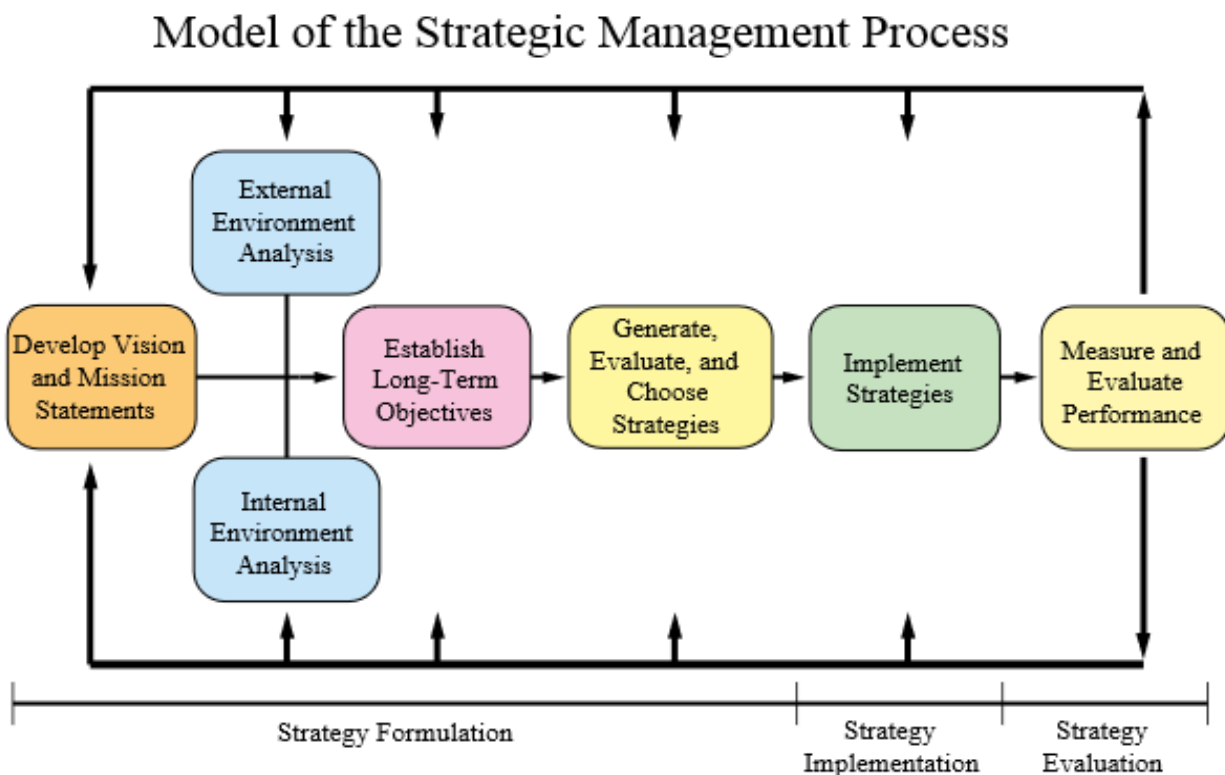


Figure 3.8: Strategic management process

Source: Thompson et al (2007)

Thompson et al. (2007:19-20), posited that the strategic management process highlights five distinct phases which are interrelated, as shown by the links in Figure 3.8. These stages are discussed as follows:

➤ **Strategy analysis**

In this stage, the executive managers identify the strategic vision of the company, current state and mission, as well as the current strategies, goals and objectives (Thompson et al., 2007:20). Sometimes, the original strategies that the company had implemented might not have helped the company in achieving its objectives. When that happens, such strategies are discontinued and the company re-analyses its current status and sets new objectives, visions and missions. Vision, as pointed out by Thompson et al. (2007:19-20), can be short-term or long term.

The success of an organisation is influenced and is dependent on its internal as well as external environmental factors. The environment must therefore be scanned and monitored continuously through exercises like SWOT and PESTEL analysis, which were discussed in detail in Chapter 2. This is done in order to determine internal strengths and weaknesses, simultaneously establishing possible external opportunities and threats. By continually scanning the external environment for any changes, management can therefore formulate strategies which, for example, would minimise threats and take full advantage of opportunities. Analysis of the internal environment would also assist managers in motivating and interacting with employees; create better interaction amongst managers themselves; and enhance brand awareness, innovation and customer satisfaction (Thompson et al., 2007:20).

➤ **Strategy Formulation**

Thompson et al. (2007:20) described strategy formulation as a process used by a company to define and set its direction on a long-term basis. This stage of the strategic management process enables an organisation to establish how it will

create and add value by efficiently managing its supply chain from acquisition of the input (raw materials) to the cost-effective delivery of the finished product to the customer. According to Thompson et al. (2007:19-20), strategic management as a process enables a company to select a peculiar position to stand by when trying to achieve competitive advantage. For strategic management to be successful, an organisation needs to integrate its long-term strategy with the following dimensions of SPMSs:

- **Setting Explicit Goals and Objectives:**

Thompson et al. (2007:20) defined goals as observable and measurable end-results, having clearly defined objectives that state precisely what must be accomplished and when. Wiley (2009: 251-274) further cited that goals need to be SMART (Specific, Measurable, Attainable, Realistic and Timely), as they connect the individual employee, business unit or department's work with the organisation's goals. Goals help the organisation appropriately plan and allocate resources.

- **Setting Explicit Metrics:**

Verweire and Van den Berghe (2004:37) defined performance metrics as analytical applications of measurements that allow comparison of performance standards. Performance metrics are used in organisations to communicate strategy from top to bottom and to tailor strategic objectives to each employee and their role within the company. Metrics also assist managers to identify and motivate, train and re-direct non-performing or underperforming employees or departments. On the other hand, employees use performance metrics as a manual guide to focus and be motivated to achieve individual goals.

- **Setting Explicit Targets:**

A target was defined by Verweire and Van den Berghe (2004:38) as a statement of the objective, defining what an organisation wants to achieve. Targets are used for evaluation purposes by comparing actual performance against what was expected. The alignment of targets with corporate goals provides a solid and accurate stepping stone for the evaluation stage in a given period of time. Setting of performance targets also assists managers in setting individual employee's targets which can easily be evaluated so that feedback can also be given effectively.

- **Performance Analysis:**

This stage of the strategy formulation process tries to compare the actual performance of the organisation, based on past history, with its future aspirations. An organisation analyses and evaluates past performance, present conditions and then tries to estimate its desired future performance if all current trends and the environment are persistent (Verweire and Van den Berghe, 2004:38).

- **Choice of Strategy:**

The company selects the best strategy and action to take after having considered its goals, objectives, strengths, weaknesses, potential external environmental limitations, as well as opportunities (Verweire and Van den Berghe 2004:38). This is the last step of the strategy formulation phase.

➤ **Strategy Implementation / Execution**

Strategy implementation, as described by David (2003:236), is the execution process where the formulated and selected strategy is translated into actual

processes and actions so that the goals and objectives that were set can be achieved. Strategy implementation was also defined by Thompson et al. (2007:21) as the process where a company executes its intended strategies as formulated and chosen in the strategy formulation process above. By implementing the chosen strategy, the company aims to achieve its goals, targets and objectives as set out during formulation. To effectively execute its strategy, the company integrates its organisational structure, its culture, its resources, employees, technology and internal control systems to function as one unit in order to gain competitive advantage and yield better organisational performance.

However, as David (2009:36-37) pointed out, success during the formulation stage is not a guarantee that implementation will also be successful. This stage of strategic management is one that is faced with much conflict, especially because managers have to compete for limited resources in order to achieve their departmental objectives (Robbins, Bergman, Stagg and Coulter, 2006: 6-8). Managers require the necessary leadership skills so that any resistance to change is effectively managed. As pointed out by David (2009:45 -47), effective communication is also key in this phase of the strategic management process.

➤ **Measure and evaluate performance / Strategy evaluation**

This is the last stage is also sometimes also referred to as the strategy control process. During this stage, management determines whether the formulated and chosen strategy has achieved the set goals and objectives. This stage is fundamental, since top management has to assess if the chosen strategy is still valid, given the dynamism of the business environment in terms of political, economic, technological changes that occur on a daily basis (Coulter et al., 2006: 6-8).

3.6.3. Benefits of Strategic Management

According to Thompson et al. (2007), Wheelen and Hunger (2007) and Pearce and Robinson (2013), the main reason that a business conducts strategic management is to be able to assess its financial performance (profitability) and to evaluate if the organisation is still aligned to its strategic goals.

The above authors also highlighted the following as the non-financial benefits of strategic management:

- Management becomes more aware of both internal and external opportunities and threats;
- Understanding of the weaknesses and strengths of business rivals (competitors) is improved;
- Employees are made aware of how individual performance affects overall organisational performance and how this performance is linked to rewards and incentives; and
- Since strategy, goals and objectives are clearly communicated during the strategic management process, there is a clear understanding of what is expected, which minimises resistance to change within the organisation

3.7. Linking strategic management to performance measurement and management

Gosselin (2005:419-437) suggested that performance measures have to be implemented as a way of communicating strategy and to monitor organisational results. Performance measures should therefore originate from a firm's strategy; should be clearly communicated in such a way that they support the objectives of the company; and then be linked to each department across all functions. This makes each employee across levels and departments aware of their individual, departmental and organisational goals and objectives. If problems arise, each employee is aware of how

to fix them, which results in a unified goal of achieving better organisational performance.

Verweire and Van den Berghe (2004:11) were of the opinion that for companies to achieve and sustain a competitive advantage, they should integrate performance management with strategic management. A business will achieve such integration by linking its performance measurement and management processes and activities to strategy. Artley and Stroh (2001:11-12) also noted that PMSs would only be successful if a business's strategy and performance measures are aligned and when all employees, as well as external stakeholders are made aware of the company's vision, mission and strategy. By providing employees with strategic direction and individual focus and goals, employees become aware of the importance of their individual contribution, which is what makes the vision and mission of the company alive. As Woiceshyn (2009:298-319) pointed out, the purpose of a PMS would therefore be able to give managers direction in allocating resources, monitor progress, evaluate and report performance.

3.7.1. Relationship between strategy and performance measurement systems

Gimbert et al. (2010:477-497) described strategy as being the ploy or pattern a company uses to stay competitive in its particular industry. Artley and Stroh (2001:11-12) also pointed out the need for PMSs to be designed in such a way that they focus on strategy. The authors were of the opinion that a PMS would only fulfil its purpose if performance measures are derived from and linked to strategy. It is also crucial, according to Gimbert et al (2010:477-497), that vision and strategy are clearly communicated to all important stakeholders. If an employee knows the performance measures being used, he is more aware of how he, as an individual, can contribute to company goals so that external stakeholders such as customers and investors are satisfied (Gimbert et al., 2010:477-497). As already pointed out by Woiceshyn (2009), PMSs give managers direction in allocating resources, to monitor progress, evaluate and report performance.

Previous researchers have suggested that most manufacturing organisations focus on product differentiation as a more important and better strategy than lowering the cost of the product (cost focus). Manufacturers base these strategies on Michael Porter's four generic strategies (Chenhall, 2005:395-422). Globalisation and technological advancements have however brought dynamism to the manufacturing sector, resulting in customers increasing their demands and the competition keeps getting more intense (Gimbert et al., 2010:477-497). With changes in customer demands and such global competition, companies also need to change their focus of how they measure their performance and stakeholder satisfaction. Concentrating on PMSs that only focus on financial performance results in other stakeholders not being satisfied, and with globalisation, deregulation of markets and advanced technology, customers have more choices than ever before (Gimbert et al, 2010:477-497).

Bisbe and Otley (2004:709-737) stated that with such dynamism, financial-based performance measures have also lost their relevance, as it has now become critical for companies to incorporate non-financial measures. Chenhall, (2005:395-422) further argues that PMSs that focus on financial performance measures only do not encourage innovation. Micheli and Manzoni (2010:465 - 476) stated that strategic performance measurement (SPM) assists companies to define, communicate and align strategy with their culture and attitudes, thereby achieving set goals and objectives. Micheli and Manzoni (2010: 465-476), in their study, examined the impact of including non-financial indicators in PMSs. The authors concluded that by using both financial and non-financial indicators, PMSs contribute to strategic alignment, learning and development of employees and knowledge can be diffused throughout the company (Micheli and Manzoni, 2010: 465-476).

Based on the above arguments, (Spencer et al, (2009:83-103) further concluded that firms pursuing strategic development and alignment are likely to adopt both financial and non-financial performance measures to provide them with the information needed for different aspects of operations.

The researcher therefore formulated the first hypothesis:

H1: There is an indirect positive relationship between strategy and overall organisational effectiveness and performance by incorporating financial as well as non-financial measures.

3.8. Organisational performance

According to the Business Dictionary (2011), organisational performance is the effectiveness of a company's ability to convert inputs to outputs through efficient internal processes. The results of how well the company performed are measured against the desired outputs. As stated in the Business Dictionary (2011), organisational performance is measured in different performance areas, like financial (ratio analysis); product quality and performance (repeat sales, market share); internal processes (efficiency, productivity); and increased shareholder value (increased ROI).

Hashem (2015) also defined organisational performance as an organisation's ability to acquire and efficiently utilise its scarce resources to meet its goals and objectives.

Carton (2004) was of the opinion that company performance is built from the concept that efficiency and effectiveness in production is accomplished by utilising both tangible and intangible assets such as plant and equipment, human resources, technology and working capital in the form of a unified association that has a common goal of achieving organisational performance.

According to Hashem (2015), financial measures like profit margins and revenue do not properly reflect how well a company is performing. Although financial performance measures are usually easy to compute, are objective and can be easily understood, they report historic and not current performance and are not always available to the public. Chong (2008:1-10) also mentioned that published financial data is usually just a mere indication of a firm's performance (usually presented as comparative percentages) and not detailed information.

In order to have a proper indication of a company's performance, Hashem (2015) suggested that financial measures be supplemented by the incorporation of non-

financial measures so that there is a clearer perspective of how a company is performing. When performance measurement incorporates financial and non-financial measures, shareholders and management will be able to compare performance on a wider perspective. By doing this, a company can also measure how effective and efficient it was in its internal processes and in the utilisation of resources, as well as, how geared the firm is to face external competition (Chong, 2008:1-10).

As early as 1994, Greenley had already researched the existence of a cause and effect relationship between performance and strategic planning. During his research, Greenley (1994: 383-396) discovered that 29 studies had already been conducted on the subject. The author divided the 29 studies into three, where the first group had nine studies that concluded that no association existed between strategic planning and performance. The second group had 12 researchers who concluded that an association existed between a company's performance and its strategic planning while the third group stated in its findings that companies which do not practise strategic management are outperformed by those that do. This last group had 8 studies. In 2007, a study conducted by Gichunge in Nairobi (Kenya) revealed that medium-sized companies in Kenya had not put in place strategic management systems in their organisations. The results from the same study also revealed that the adoption of strategic management in Kenya was still being influenced by competition and legal factors. In Anambra State, Nigeria, a study conducted by Muogbo (2013:24-32) concluded that manufacturing companies were not yet familiar with the importance of strategic management in their business practices.

In this study, the researcher also attempts to add to these existing studies and contribute more information and findings on the association between strategy, PMS and overall organisational effectiveness and performance.

3.8.1. Association between PMSs and organisational performance

Woiceshyn (2009:298-319) pointed out that the purpose of a PMS would be to give managers direction in allocating resources, to monitor progress, evaluate and report

performance. Melnyk, Hanson and Calantone (2010:574) also did a study on large home suppliers in which they concluded in the importance of a PMS in encouraging innovation, learning and improvement. Kaplan and Norton (2008:79) suggested that SPMSs assist managers to re-examine formulated strategies and ascertain whether there is a need for just incremental improvements or a complete re-formulation of strategies. Judging from all this literature, researchers have recognised and placed emphasis on the need for the design and development of PMSs that are balanced in that they integrate performance measures that are financial and also those that are non-financial in nature. The links between performance measurement systems and organisational performance, based on a combination of findings from all the previous studies above, can be summarised by way of a diagram as shown below:

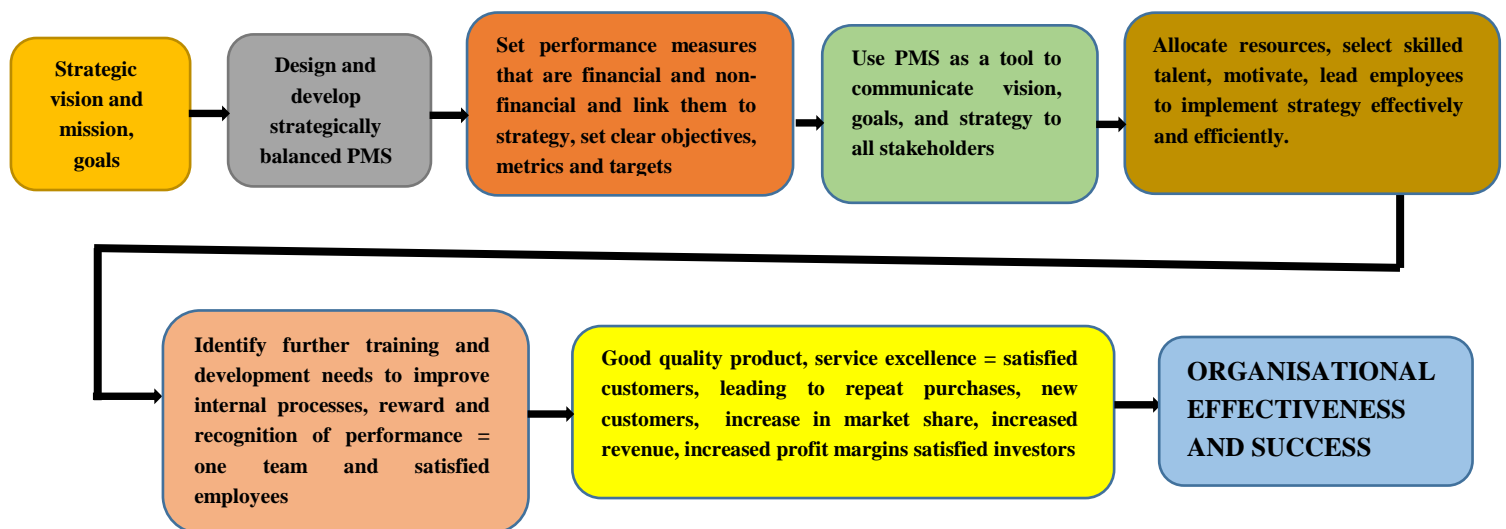


Figure 3.9: The relationship between a PMS and organisational performance:

Source: Author's own

In summary and as shown on Figure 3.9 above, it may be concluded that if a developed PMS is strategic and integrated, it can be implemented as an instrument to break down an organisation's vision and goals into action plans in the form of specific goals, targets and performance measures that are also linked to strategy. Objectives and targets are measurable and comparable, which means that the PMS has enabled the company to

clearly communicate its strategy and vision to stakeholders. The PMS was also used to identify talent, allocate resources, motivate and reward good performance. By doing this, employees work as a team to meet targets and objectives and internal processes are managed more efficiently, resulting in production of a good quality product which satisfies customers. When customers are satisfied, repeat purchases occur, new customers are attracted and market share increases, resulting in the increased revenue. When this happens, all stakeholders: (employees, customers and investors') needs are met. There is therefore overall organisational success, which is not only based on financial performance.

From this section and from the explanations above, the second hypothesis was formulated as follows:

H2: There is existence of a positive association between the use of SPMMs and organisational performance

3.8.2. Association between strategy, PMS and Organisational Performance

Distinct relationships have already been established and outlined above, namely: a) strategy and PMS, and b) organisational performance and PMS. From these associations, the researcher further hypothesises an indirect association between strategy and organisational performance through the use of an integrated PMS (SPMS). Based on the relationships discussed above, the researcher expects organisations that focus on strategic management (formulation, implementation, and evaluation and (re) formulation) to also use balanced performance measures in the form of financial and non-financial measures which are incorporated in their SPMSs. This therefore means that PMSs which incorporate financial and non-financial performance measures are likely to yield improved organisational performance. According to Spencer, et al (2009:83-103), the direct relationship between strategy and organisational performance is only expected if an organisation is using an integrated PMS which incorporates financial and non-financial measures of performance. This association was expressed in the researcher's third hypothesis:

H3: There is an indirect positive relationship between effective strategy and an organisation’s overall performance through the incorporation of financial and non-financial measures in a PMS

Figure 3.10 below further summarises this association. The indirect relationship is represented by the dotted line, while direct associations are represented by solid lines.

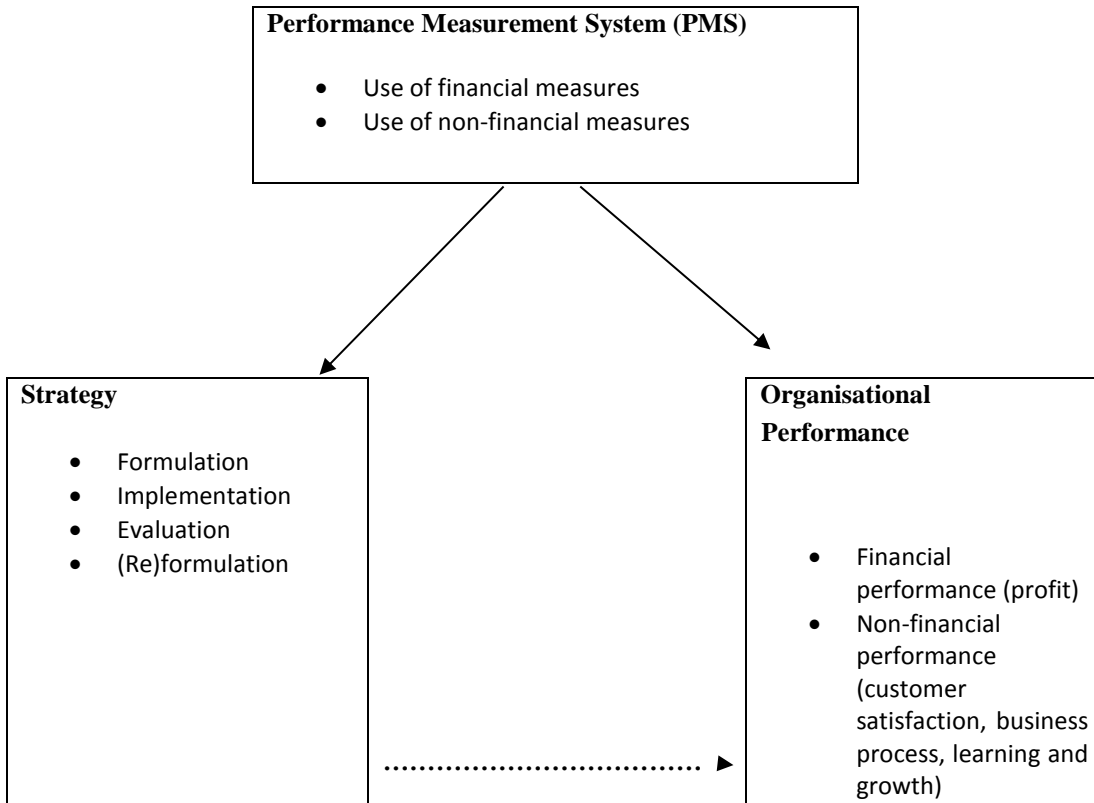


Figure 3.10: Hypothesised model of the association between strategy, organisational performance and SPMS:

Source: Author’s own

3.9. Introducing the Balanced Scorecard (BSC)

The BSC was designed and developed by Kaplan and Norton in 1992 (Verweire and Van den Berghe, 2004). Hwang and Rau (2007:218) emphasised the main role of a BSC as that of assisting organisations to translate their visions and strategies into objectives, metrics and targets. The BSC is also a tool to communicate strategy in a more definitive and clearer way. The different perspectives of a scorecard mean that

there will also be a balance between the focus on short-term as well as long-term objectives and also between different performance drivers and their outcomes (Kaplan and Norton, 2008:81).

Verweire and Van den Berghe (2004) stated that the Balanced Scorecard has the following strengths over other types of SPMSs:

- It assists in communicating strategy and vision in a more explicit and clearer way;
- It allows strategy to be monitored consistently;
- There is integration of financial and non-financial measures; and
- It clearly defines cause-effect relationships between perspectives.

3.9.1. Components of a balanced scorecard

The BSC is split into four components which are distinct but also interconnected (Kaplan and Norton, 1996:24 - 29). These components are: a) the vision, b) the mission, c) objectives and measures and d) strategic perspectives.

3.9.2. The vision of the business

The Corporate Finance Institute (CFI) (2015) described a vision as the state the company desires to be in the future. The vision brings a challenging atmosphere to employees, helping employees and stakeholders identify with the company towards a unified goal. A vision also motivates employees and provides direction to the whole organisation.

3.9.3. The mission of the business

The CFI (2015) defined a mission as the reason or purpose for the company's existence, which embodies its philosophies, goals and ambitions. While a vision defines the future aspirations and achievements of a company, a mission statement

defines the core of what the business does and how it intends to reach set objectives. A mission also defines company values and culture.

3.9.4. Objectives and measures

David (2009:36-47) defined objectives as the outcomes an organisation aspires to achieve, while measures are the actual action plans the company takes to achieve the said objectives. During the BSC design and development stage, executive managers start by stating the company's vision, mission and strategy. The second stage is then to select the objectives and performance measures, which are derived from the strategy. During evaluation, these objectives and measures will be compared against actual results to assess how well the company effectively implemented its strategies (Kaplan and Norton, 2008).

3.9.5. The strategic perspectives

Kaplan and Norton (1996:5) cited four generic perspectives of the BSC which they believe are applicable to any organisation. These perspectives are derived from strategy and should be driven by the company's mission and vision, ensuring that measures in each perspective lead to the desired goals and objectives. The four perspectives are discussed as follows:

➤ The financial perspective

This perspective is also referred to as the shareholders' interests perspective as it is mostly concerned with the views of the shareholders on the company. For most companies, the financial perspective remains the most important on the scorecard. Financial performance is viewed as an indication of whether the formulated and implemented strategies are contributing to the achievement of the desired goal. Key performance indicators would be revenue growth, improved profit margins, increase in working capital, increased market share, decline in debtor days, return on investment

(ROE) and increased shareholder value. According to Kaplan and Norton (2008), other stakeholders like banks also rely mostly on the financial performance of a company to grant or decline business loans.

➤ **Customer perspective**

This perspective is mainly concerned with how customers perceive the company. Companies are concerned with meeting customer expectations in order to a gain competitive advantage. KPIs in this perspective would be product quality; efficiency of purchases; service excellence; pricing; number of customer complaints; delivery time and volume of repeat purchases. Performance measures in this perspective would be:

- **Market share:** The proportion of the company's customers, total customer spend and quantities purchased compared to industry totals;
- **Customer retention:** The rate at which the company retains existing customers and how relationships with such customers are being maintained;
- **Customer Acquisition:** A measure of the rate at which new customers are being attracted; and
- **Customer satisfaction:** Measures how much customers are satisfied with a product or service. The main indication is repeat purchases, leading to brand loyalty.

If a company has high scores in customer performance, it is a good indicator of good financial and overall organisational performance in the future since satisfied customers are likely to repeat their purchases and recommend the product to other potential customers, resulting in increased market share (Kaplan and Norton, 2008).

➤ **Internal business-process perspective**

This perspective requires a business to know its customers' expectations and requirements and to use high quality inputs from suppliers in order to produce a good quality product. Businesses should therefore focus on production efficiency in their internal processes by employing competent and skilled human resources and acquiring and keeping track of new technology in order to satisfy customers. Delighted customers

lead to repeat purchases and increased revenue and profits (Kaplan and Norton, 2008). Internal processes translate customer needs and demands into production and internal actions that will lead to the satisfaction of such needs (Kaplan and Norton, 1992:71-79). Performance measures in the internal processes are product quality, rate of production, lead time, operational excellence and product defects. Kaplan and Norton (1992:71-79) also pointed out that better performance in internal processes leads to higher ratings in customer satisfaction and better company performance.

➤ **Learning and growth/people perspective**

Kaplan and Norton (2008) cited that globalisation, the deregulation of markets and advanced technology have led to increased global competition. Besides monitoring existing internal business processes and current customer needs, organisations also need to be more innovative in both their internal processes and their products. The learning and growth perspective, according to these two authors, focuses on retaining the most important resource, the human resource. The objectives should therefore be to invest in human talent, information systems, business processes and the culture of the organisation. Achievement of these objectives will improve overall organisational learning and development. Examples of performance measures a company could use for this quadrant are: effective business processes, service excellence, monitoring of absenteeism, staff turnover rates and abuse of sick leave. Customer satisfaction can also be used as a measure in this quadrant since satisfied customers are a reflection of excellent service from employees (Kaplan and Norton, 2008).

Kaplan and Norton (1993) summarised the components of a BSC in a diagram, as shown in Figure 3.11 below:

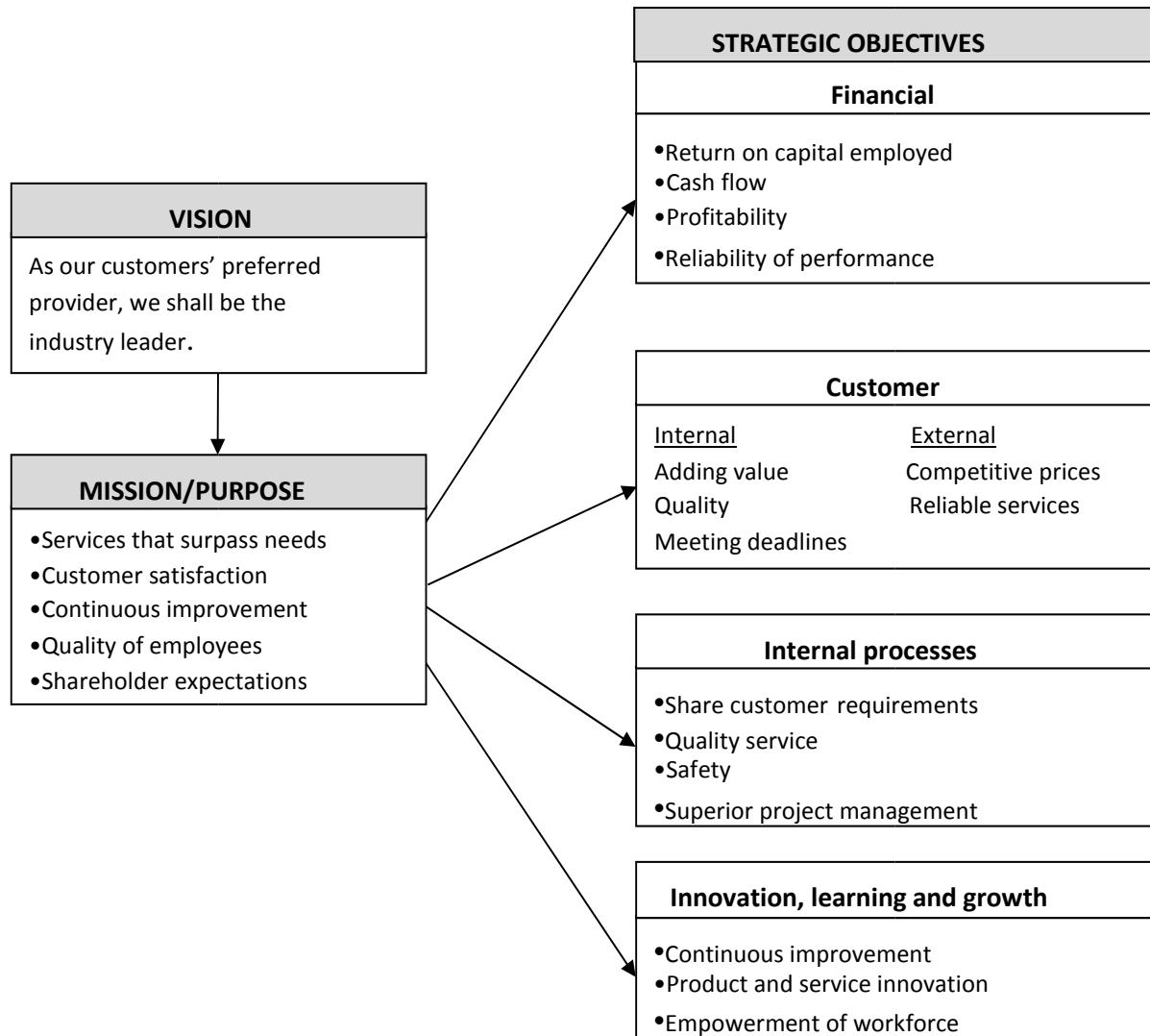


Figure 3.11: The components of a BSC

Source: Kaplan and Norton (1993:135)

In their book, Verweire and Van den Berghe (2004) also pointed out that organisations must note the linkages and cause-effect relationships between the four quadrants themselves, as well as between performance measures of the perspectives. These linkages were summarised by Mackay (2004:19) as shown in Figure 3.12 below.

Figure 3.12 reveals that efficiency in productivity in learning and growth improves the quality of the product in internal business processes, which could hypothetically increase customer satisfaction in the customer quadrant.

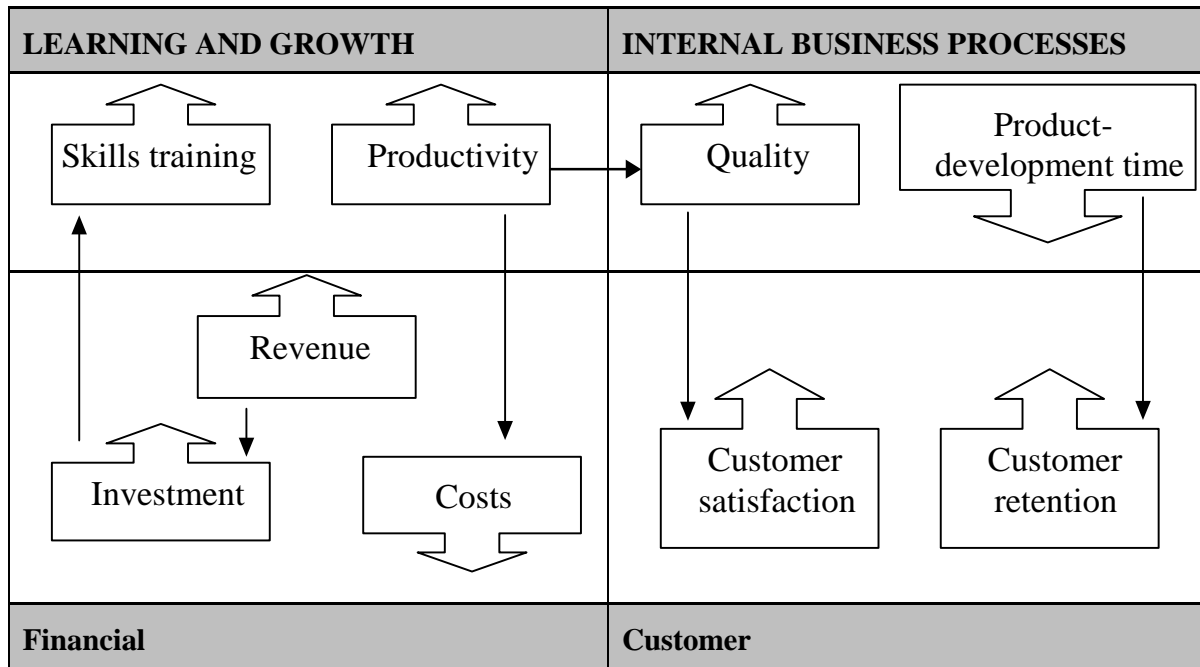


Figure 3.12: A hypothesis of linkages between scorecard measures

Source: Mackay (2004:19)

3.10. Supply Chain Management: an additional dimension to integrated performance measurement

Khan (2013) described supply chain management as the overall management of all processes that are incorporated into the production of goods from inputs (raw materials) to the delivery of the finished product. Supply chain management plays a major role in product customisation, quality assurance and control, cost reductions and product delivery time. For inputs to be efficiently transformed into good quality outputs, a supply chain management strategy is vital to an organisation and must be implemented effectively (Khan, 2013). Khan (2013) further highlighted that for a manufacturing enterprise to meet customer needs, the supply chain management

strategy should also be aligned with the overall corporate strategy. All manufacturing strategy should also be aligned with the overall cooperate strategy. All manufacturing firms are affected differently by supply chain management issues, such as raw materials (inputs), production costs, the infrastructure, company's interaction with stakeholders (customers and suppliers) and the overall profitability of the manufactured products. Managers therefore need to understand how supply chain management affects the efficiency of internal business processes from a strategic viewpoint (Hervani et al., 2005:330-353). As opposed to competing based on the quality of the product only, companies now compete based on how well they can link business activities with partners in their supply chain, like suppliers of raw materials , product distributors, retailers, wholesalers and the end-users (the customers) (Hervani et al., 2005:330-353). This ability to create strong and linked relationships with stakeholders creates a crucial competitive advantage. Suppliers, for example, can choose to supply those companies they have a trusted, long-term relationship with first before supplying anyone else (Khan, 2013). Hervani et al. (2005:330-353) described the following as the major benefits of having a supply chain management system incorporated into a PMS:

3.10.1. Reliability of Inputs

If supply chain management is done effectively, there is assurance that raw materials from suppliers are received and distributed from warehouses to production sites timeously. However, if supply chain is poorly managed, production can come to a halt due to stock-outs. The manufacturer might also be forced to purchase raw materials from alternative suppliers, which might result in higher prices, lower profits, or the quality of the raw materials is compromised.

3.10.2. Distribution Costs

A supply chain has to be cost-effective from the delivery costs of the inputs (inbound logistics) to its costs of delivering the finished product (outbound logistics). Modern

manufacturers use tracking devices for drivers, lower cost purchasing systems, economic handling of stock and warehousing so that supply chain costs are minimised. If this happens, the cost of production is also minimised, thereby increasing the profitability of the company.

3.10.3. Supplier integration

In an integrated SPMMS such as a BSC, customer satisfaction is one of the most important performance measures (Kaplan and Norton, 2008). Supply chain management should therefore form an integral part of businesses because customers expect correct and good quality products that are always delivered on time. It is important therefore to incorporate suppliers into an integrated PMS like the BSC as a non-financial measure of performance (Laosirihongthong and Dangayach, 2005:263-272). Manufacturing organisations now view supply chain management as an important dimension in their business processes (Dangayach and Deshmukh, 2003:279-298). Supply chain management is therefore the art of acquiring good quality raw materials from the supplier at a lower price; efficiently turning the input into an output and distributing the good quality output; to the customer in time, while minimising overheads between the supplier, the manufacturer and the customer (Gunasekaran and Ngai, 2004:269-295).

Supply chain management started as far back as the early 1980s in the global manufacturing sector. It originated from business process innovations like total quality management (TQM) and just-in-time (JIT) (Vrijhoef and Koskela, 2000:169-178). According to Micheli and Mura (2017: 423-443) supply chain management was first introduced in 1985 by Michael Eugene Porter when he summarised the whole supply chain management process in his model called The Value Chain, as represented in Figure 3.13 below:

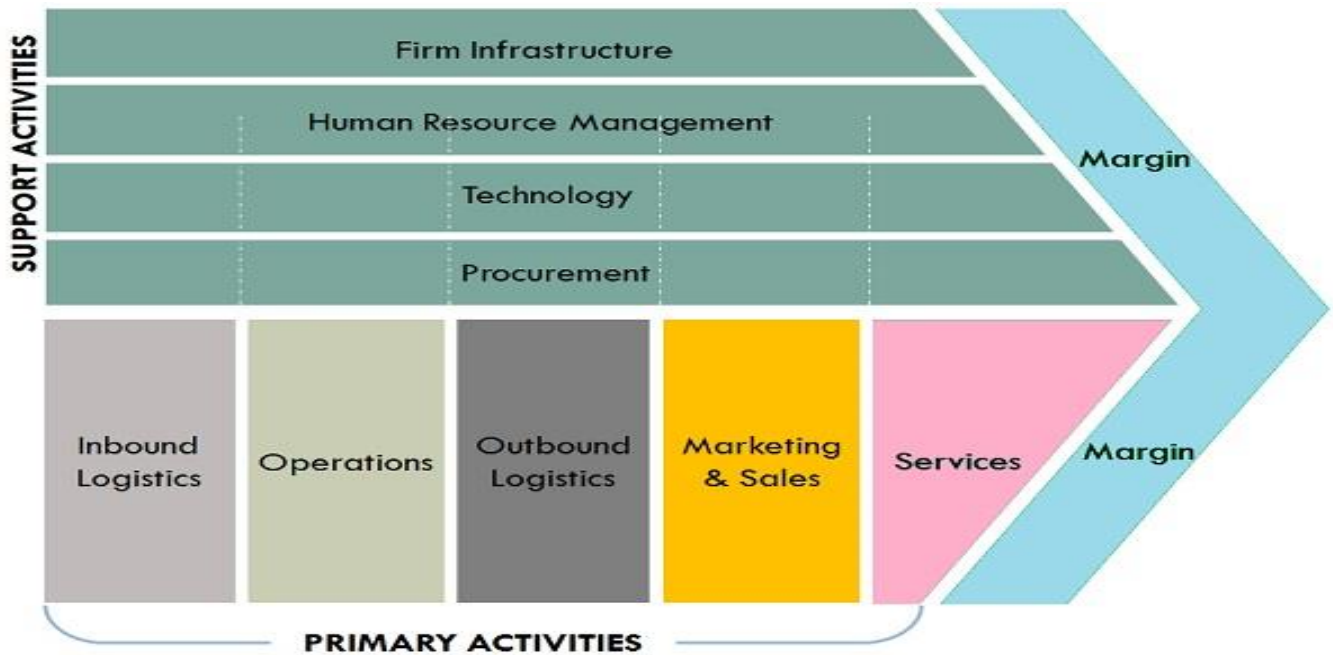


Figure 3.13: Value chain model

Source: Porter (1985)

The idea of the value chain according to Porter (1985) is based on the view that a manufacturing organisation should be a unified system of converting inputs by using internal processes in order to produce a product (output). This process of converting inputs to outputs requires the utilisation of resources such as cash flow, raw materials, human resources (labour), plant and equipment, management, land and buildings.

The value chain, as Porter (1985) identified, incorporates the following drivers of revenue and profit in an organisation: procurement of raw materials (inbound logistics); business processes (operations); advertising, sales and marketing, delivery of finished goods (outbound logistics); and customer relations (service).

Porter (1985) pointed out the following as the **primary activities** of the value chain:

- **Inbound logistics:**

Focus is on building good, trusted and long-term relationships with suppliers with activities such as ordering, receiving, storage and distribution of the inputs to

production departments. To enhance the value chain in this stage, raw materials (input) should be of good quality and the cost of acquisition of such input needs to be optimised. Taking advantage of economies of scale is advantageous at this stage.

- **Business operations:**

These are the internal business processes as mentioned in the strategic perspectives of the BSC. The activities in this quadrant include the actual transformation of raw materials (the inputs) to finished products (outputs). If business processes and production are done efficiently, the cost of sales are lower and the product is of good quality, thereby creating a delighted and satisfied customer, resulting in increased customer value.

- **Outbound logistics:**

Outbound logistics focus on how the finished product is stored when waiting to be distributed and how efficiently it is distributed to the customer. If deliveries to customers are done timeously and in a cost-effective manner, product quality is maintained and value is further enhanced.

- **Marketing and sales:**

Marketing managers need to make the company's product as visible as possible to potential customers, as well as target the appropriate customers in their marketing campaigns. They need to be able to convince the customer to buy the product so that revenue is increased and the company remains profitable.

- **Service:**

In the value chain, after-sales service is the most important of all activities as it deals with customers directly. Delighted and satisfied customers will make repeat

purchases, thereby increasing the brand's market share and giving a boost to the value chain as a whole.

Secondary activities:

These, according to Porter (1985) will assist an organisation to further improve its primary activities, as shown in the diagram above. Porter named them support activities. These, as pointed out by Porter (1985) are:

- **Procurement:**

It is the role of the procurement or buying department to source the best quality raw materials and to negotiate the prices of those inputs so that they support the inbound logistics. When raw material quality is good and acquired at a lower cost, value is added to the product that is manufactured and the company makes profits.

- **Technology development:**

This supports both the operations and marketing department and is usually the role of the IT and research and development departments. Designing and development of advanced equipment, software, hardware, internal business procedures and training employees in technical skills would ensure value addition. Examples of technological developments would be a move from a manual filing system to saving information onto a server or creating websites for marketing and telemarketing instead of driving to each company to try and advertise a product.

- **Human Resource Management:**

These include HR responsibilities in making sure that the best employees with necessary skills and talent are hired and retained in order that the business strategy is fulfilled. The HR role does not only support one primary activity, but all

the activities in the organisation from inbound to outbound logistics since all activities need special skills to be completed effectively and efficiently so that costs are lowered and value is added at each stage of production.

- **Infrastructure:**

Infrastructure consists of different departments of a company, for example, finance, human resources, production, operations, information technology and quality assurance. All the functions of a company are tied and linked together to form a system that takes care of both customer and company needs so that the organisation's value improves.

Kaplan and Norton (2008) emphasised the relevance of Porter's value chain in that it incorporates all the four perspectives of the BSC (hence an integrated performance management). The value chain, by Porter, incorporates all the activities of the supply chain from the purchase of inputs to outbound logistics and the after-sales service. The BSC by Kaplan and Norton, however, lacks one of the most important perspectives, the **supplier perspective**, because without good quality raw materials that are delivered on time, it becomes difficult to satisfy the customer (Pekkola, 2013). The proposed BSC in this research will therefore incorporate all the aspects of the supply chain and value chain model by adding a new perspective (supplier perspective) to the existing four perspectives of the original BSC.

3.10.4. Supplier Performance

As advocated by Kosgei and Gitau (2016:134-148), supplier performance measures are tools to determine whether suppliers are doing their work as expected, or not. If a suppliers are effectively managed, there should be signed supplier contracts which clearly state what is expected from the supplier and what key performance indicators (KPIs) are to be used when measuring supplier performance. Supplier integration is therefore a vital perspective, especially for manufacturing companies that need to ensure the reliability and quality of the raw materials delivered. Most supplier

performance measures usually address similar areas and may only differ based on whether a company is purchasing goods or services from the supplier (Kosgei and Gitau, 2016:134-148).

The table below, according to Kosgei and Gitau (2016:134-148), includes some examples of supplier performance measures:

Table 3.5: Examples of measures of supplier performance

Business Need	Example Supplier Performance Measure	Example SMART Metric
Improved Quality	Product reliability improvement	5% reduction in customer warranty claims within 12 months
Better Service	Customer experience improvement	10% higher satisfaction rating from external customers or users
Reduced Cost	Specification change resulting in lower operating cost	2% price reduction each contract year resulting from approved vendor-initiated reengineering activities
Regulatory Compliance	Working within legal standards, health and safety protocols or organizational guidelines	
Social Responsibility	Sustainability, diversity or community initiatives	
Innovation	Continuous improvement resulting in improved outcomes	

Source: Kosgei and Gitau (2016).

3.10.5. Establishing key performance indicators (KPIs) for supplier performance

In order to create a meaningful evaluation plan for supplier performance, a company should finalise broad and detailed parameters that need to be measured. According to Kosgei and Gitau, (2016:134-148), some of the parameters to be included in a supplier KPI checklist are:

Price:

The existence of economies of scale can help companies negotiate good deals which can benefit both the organisation and the supplier. Suppliers who give price discounts can in turn capitalise on large and repeat purchases from buyers. Invoices should also be checked to make sure that the price has not changed from what was quoted.

Cost:

Costs should include all cash and non-monetary costs incurred from placing orders, the actual price paid for inputs, delivery and freight costs of inputs, packaging, handling, import duties, warehousing and transfers.

Quantity:

Careful reconciliations should be done to compare quantities received against what was ordered. Inputs that were ordered, paid for but not delivered must therefore be credited.

Quality:

Raw materials received must be checked for any defects so that damaged goods are returned.

Service:

This measures how well the supplier communicates about deliveries; response rates when there are queries; how much the supplier values customer satisfaction; and overall service excellence.

Delivery:

These are timeframes from the time an order is placed, processed and delivered by the supplier. If this is done efficiently, the customer is satisfied with the supplier.

Payment terms:

Suppliers who offer favourable and flexible payment terms, for example 30 days or 60 days, are preferred more than those who offer cash or rigid terms.

Certifications:

Different industries are governed by different regulatory bodies and an accredited supplier is always preferred and trusted more by sourcing companies.

Financial health:

A healthy cash flow and working capital enables a supplier to be innovative, offer excellent and efficient service and extend flexible and longer payment terms.

Compliance:

One of the most important compliance checks is tax compliance. In South Africa, a company's tax status with the South African Revenue Service (SARS) can now be easily checked online. A supplier who is compliant with SARS and other industry regulators is more likely to be conducting fair business practices as well.

3.10.6. Supplier Integration and Organisational Performance

A study conducted by Frohlich and Westbrook (2001:185-200) identified the importance of the supply chain, if effectively managed, in improving both the marketing and financial performance of an organisation. Frohlich and Westbrook (2001:185-200) further cited the existence of improved organisational performance in those manufacturing companies that integrated suppliers and customers into their supply chains. This, according to the authors, is because supplier relationship management

(SRM) ensures on-time delivery, good product quality, reliability and lower costs of inputs, which as stated earlier, create a competitive advantage against other competitors.

In a study conducted by Mutuerandu (2014:62-64), she revealed that most manufacturing industries in Kenya have now implemented SCM in their firms. She also concluded that supply chain management, when done effectively, improves an organisation's overall performance by lowering production costs, reducing customer lead times, offering excellent customer service, improving product quality and by increasing market share due to satisfied customers. In the same study, Mutuerandu (2014:62-64) divided organisational performance into three parts: operational (effective business systems and processes); product (good quality product delivered on time); and financial performance (increased ROI, increased revenue and profits). Research done by Flynn, Huo and Zhao (2010:58-71) found a positive relationship between an organisation's strategy, supplier integration and overall business performance through stakeholder satisfaction. Moreover, in that study, the organisational performance construct was defined by profitability growth, income growth and increase in market share.

This positive association has been hypothesised in this study by means of a diagram as follows:

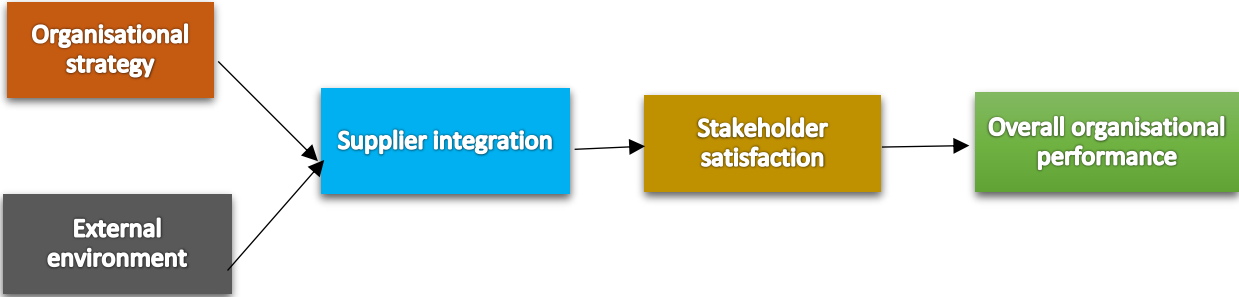


Figure 3.14: Association between strategy, supplier integration and business performance.

Source: Author's own

3.11. Summary

This chapter briefly discussed how performance measurement has been developing and it touched on traditional methods of measuring performance. The chapter also reviewed various studies in order to derive a list of guidelines and requirements for SPMMs. Existing PMSs were discussed and the BSC was introduced. Associations between the variables of this study: strategy, PMSs and organisational performance were identified and discussed. Chapter 3 ended by introducing another non-financial perspective (supplier performance), an important aspect of manufacturing, which should be included in a PMS since it involves all processes of adding value to the product from the purchase of inputs to outbound logistics (delivery of product to the customer) and the after-sales service, which are all important for customer satisfaction. The researcher discovered how vast the topic of performance measurement is and how various scholars have approached it from different angles to come up with important findings that have helped build up the knowledge on the topic. However, the following conclusions were drawn:

- A PMS needs to be strategic and integrative with balanced measures in order to be called a SPMS;
- Employees from all levels within the organisation should be involved in the design, implementation and evaluation of a PMS for it to be successful;
- A SPMS should have different perspectives and should not only focus on one dimension;
- An organisation should view a SPMS as a learning and development tool instead of seeing it as a controlling tool;
- Measures in a SPMS should be derived from and also linked to corporate strategy;
- Performance measures in each dimension or perspective must be linked to measures in other perspectives and should clearly reveal the cause-effect relationships between perspectives and the measures themselves;
- A SPMS must incorporate the vision and mission of an organisation
- Objectives in a SPMS must come from the vision of the company.

Literature has revealed that although multiple PMSs currently exist, none of them has been pre-dominantly designed and developed specifically for manufacturing companies. Although dynamism, globalisation and advanced technology have changed the way performance should be measured, many manufacturing companies have just carried on using traditional performance measurement since there is no established PMS applicable only to their industry.

Chapter Four defines and presents the research methodology and the procedures used for data collection. The research population will be established and a sample will be selected from the population.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

As cited by Nylander and Renberg (2014), a research study often has three main objectives, namely: a) to discover facts (data) that may be used to describe situations; b) to evaluate actions; and c) to answer the research questions. For a researcher to have successfully met the said objectives, it is vital that research facts are accurate and can be measured statistically and in descriptive terms (Nylander and Renberg, 2014). This chapter therefore aims to present the methods used in answering the research problem outlined in Chapter 1. The current chapter begins by explaining the philosophical consideration behind the research methodology, then goes on to discuss the approach to data analysis. The research instrument, the sampling method and the research ethics will also be discussed. Moreover, the chapter discusses how the pilot test was conducted and how the researcher maintained validity and reliability in the study.

According to Bititci et al. (2012:305-327) and as already stated in Chapter 1, previous studies have failed to yield a broadly accepted performance measurement system (PMS) that is also valid for manufacturing organisations.

This research was two-fold, as shown by the main objectives:

- The purpose of the first stage was to investigate the types of PMSs being used by manufacturing companies in KZN and whether these PMSs were strategic and integrated by examining their degree of incorporation of financial and non-financial performance measures.
- In Stage 2, a model (SPMMS) is developed for manufacturing companies by using the BSC as a reference model

Saunders, Lewis and Thornhill (2007) developed a model that they named the ‘research onion’, which describes the steps and stages the researcher takes in order to formulate an effective research methodology. These stages were summarised in a diagram as shown below:

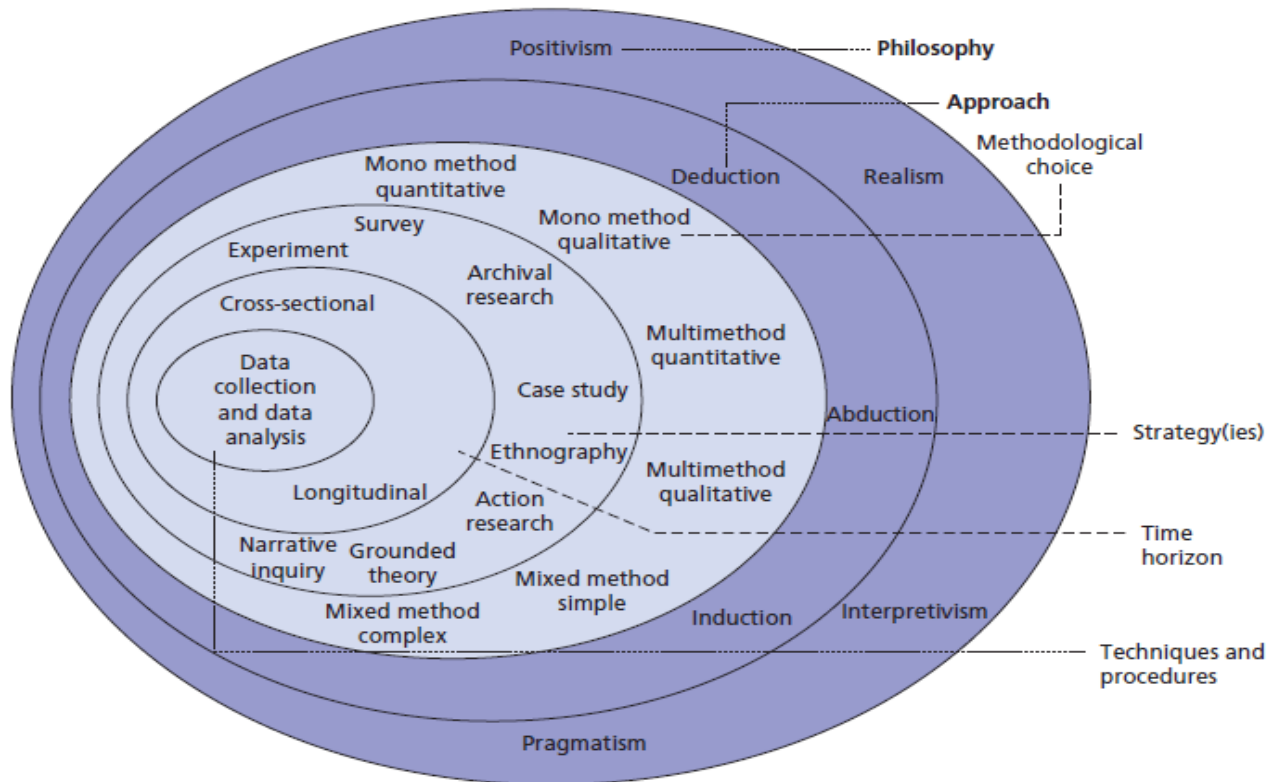


Figure 4.1: The Research Onion

Source: Saunders et al. (2007)

The stages in Figure 4.1 above will be discussed in detail below:

4.2 Research Philosophy

While Birks and Mills (2015) describe a philosophy as what a researcher recognises as real and how information and knowledge can be acquired about such a phenomenon, Bryman (2012) defined it as a shared belief by researchers on how data about a particular

phenomenon is supposed to be gathered, analysed, interpreted and understood. Eriksson and Kovalainen (2015:13) added that a research's background determines the strategies and methodology the researcher should employ in order to address the study objectives. A research philosophy creates assumptions that determine and justify the way a research study is conducted (Flick, 2011). Every research has different goals and objectives; which means the methods used to achieve such goals may also differ from one research to the other. However, research philosophies do not conflict each other (Flick, 2011). The choice of the research philosophy to be used, is however based on primary knowledge of the project at hand (May, 2011). An understanding of the adopted research philosophy can assist in determining and detailing the inherent suppositions in a research and how suitable this is for the chosen methodology. Mkansi and Acheampong (2012:132-140) stated that the difficulty in conducting research has become more difficult because of the unclear and incomprehensible classification of research philosophies. According to Saunders et al. (2009), researchers have a choice of six philosophies which they can choose from when conducting research, namely: positivism, interpretivism, epistemology, realism, ontology and axiology. However, Saunders et al. (2009) further distinguished two major philosophies that are usually used in research, as explained below:

4.2.1 Interpretivism

Interpretivism deals with things that cannot be counted, for example, trying to understand people's behavior, feelings and emotions (Babbie, 2008:28). According to Neuman (2014), humans are always trying to understand their environments and what happens in their lives and surroundings by attempting to put logic and sense into behaviours, attitudes and give meaning to things that happen every day. According to Rubin and Babbie (2009), interpretivism is a paradigm which tries to explain life's events, cultures, social groups and the importance of these phenomena to human beings. Interpretivism in research is therefore shaped and influenced by how participants perceive social realities, as well as by the beliefs, social values, culture and aims of the researcher (Babbie, 2009).

In interpretivism, there is no testing of cause-and-effect relationships since nothing can be counted or measured in numbers as only meanings of events need to be interpreted since social circumstances and conditions continuously change (Babbie, 2009).

4.2.2 Positivism

In positivism, the researcher formulates hypotheses to describe the study phenomena, then finds ways to test them and accept or nullify them (Babbie, 2011:35). The establishment, formulation and statistical testing of hypotheses is done so that scientific laws of cause-effect relationships can be explained and resulting patterns can be generalised to the entire population. Major (2017:173) also stated the fact that positivists are governed by scientific laws which separate the researcher from the object or subject being observed and the researcher must not interact with the subjects. Krauss (2005: 760) cited that the set laws and rules that guide positivists reduce errors in any findings of a research.

4.3 Research Approaches

Bryman and Bell (2015) defined a research approach as the procedural plan with details of steps the researcher took to conduct the study. The choice of a particular research is therefore based on the problem to be addressed (Saunders et al., 2012). According to Burney and Saleem (2008), three approaches in research methodology exist: deductive, inductive and abductive approach. The main characteristics of the three approaches were further summarised by Burney and Saleem (2008) in Figure 4.2 and by Bryman and Bell (2015) in Table 4.3.1 below.

Deductive Vs. Inductive

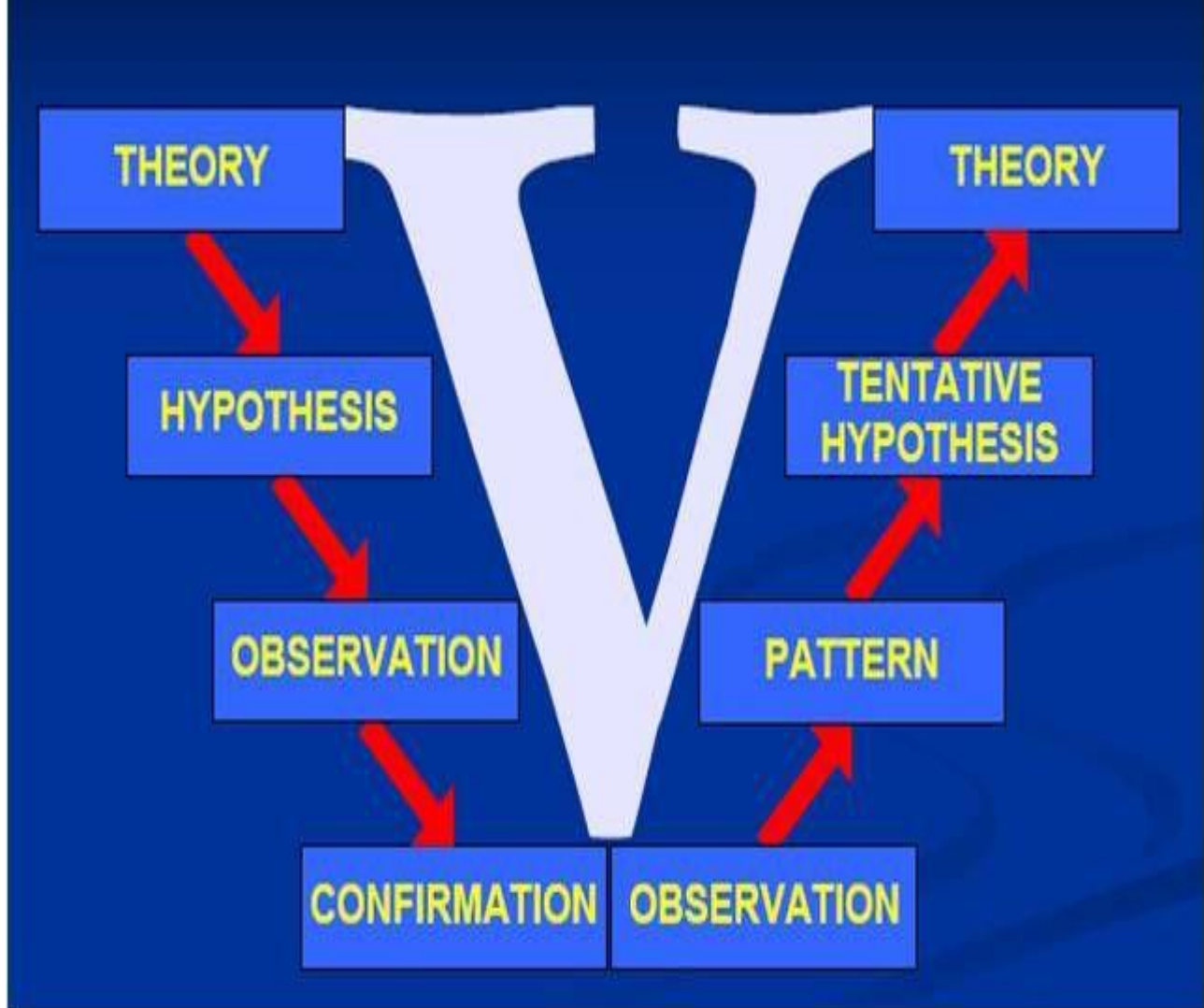


Figure 4.2: Deductive and Inductive Approaches
Source: Burney and Saleem (2008)

Table 4.1: Deductive, inductive and abductive approaches

	Deductive	Inductive	Abductive
Logic	In a deductive inference, when the premises are true, the conclusion must also be true	In an inductive inference, known premises are used to generate untested conclusions	In an abductive inference, known premises are used to generate testable conclusions
Generalisability	Generalising from the general to the specific	Generalising from the specific to the general	Generalising from the interactions between the specific and the general
Use of data	Data collection is used to evaluate propositions or hypotheses related to an existing theory	Data collection is used to explore a phenomenon, identify themes and patterns and create a conceptual framework	Data collection is used to explore a phenomenon, identify themes and patterns, locate these in a conceptual framework and test this through subsequent data collection and so forth
Theory	Theory falsification or verification	Theory generation and building	Theory generation or modification; incorporating existing theory where appropriate, to build new theory or modify existing theory

Source: Bryman and Bell (2015)

4.3.1 Deductive Approach

Based on existing theory, the deductive approach formulates hypotheses and then designs research strategies to test the developed hypotheses (Silverman, 2013). According to Wiles, Crow and Pain (2011:587-604), a deductive approach cannot be

used if there is no theory yet. Therefore, deductive research can only be conducted where there has been inductive research first. The deductive approach has been considered by some scholars as being suitable in particular to positivism, which permits hypotheses to be formulated with expected results that can be statistically tested. Snieder and Larner (2009) cited that a deductive approach is therefore more suited to the positivist researcher who needs to formulate and test hypotheses. In rare cases, a qualitative researcher may also adopt a deductive approach but would not be able to test expectations from pre-existing theory by formulating and testing hypotheses, hence testing would then be done differently (Saunders et al., 2012). The steps of a deductive research approach as shown in Figure 4.2 above are: theory, hypothesis, observation and confirmation (Burney and Saleem 2008).

4.3.2 Inductive Approach

When there is no pre-existing theory or literature on a chosen study topic, researchers adopt an inductive approach since there will not be any theory to test (Bryman and Bell, 2015). The inductive approach is therefore perceived as a way of generating new theories. However, after analysing data, a researcher may sometimes discover that the research could fit and be based on pre-existing theory (Bryman and Bell, 2015). As stated by Bryman and Bell (2015), the inductive approach is more popular in qualitative research where a potential researcher's bias is reduced due to the fact that there is absence of pre-existing theory to predetermine the process of the study. When using the qualitative approach, researchers interview respondents and then analyse the data for patterns amongst respondents (Flick, 2011). The inductive approach stages are therefore: observation; pattern; tentative hypothesis then theory, as shown in Figure 4.2.

4.3.3 Abductive Research Approach

Wiles et al (2011:587-604) described abductive approach as one that uses given and available information (usually incomplete information) to give the best possible

explanation and conclusion to a phenomenon. According to Wiles et al. (2011:587-604), this is the main reason why 'abductive' is usually called 'abductive reasoning', not an approach. An example of abductive reasoning would be a patient who has fainted and is rushed to the doctor by a friend. Because the patient is not able to talk, the doctor would just use whatever information is provided by the friend and the symptoms he sees on the patient to still give a diagnosis. In this case, the doctor uses the incomplete information to give the 'best possible' explanation for the unconsciousness. The three main approaches have been discussed. The diagram below summarizes the differences amongst the three of them.

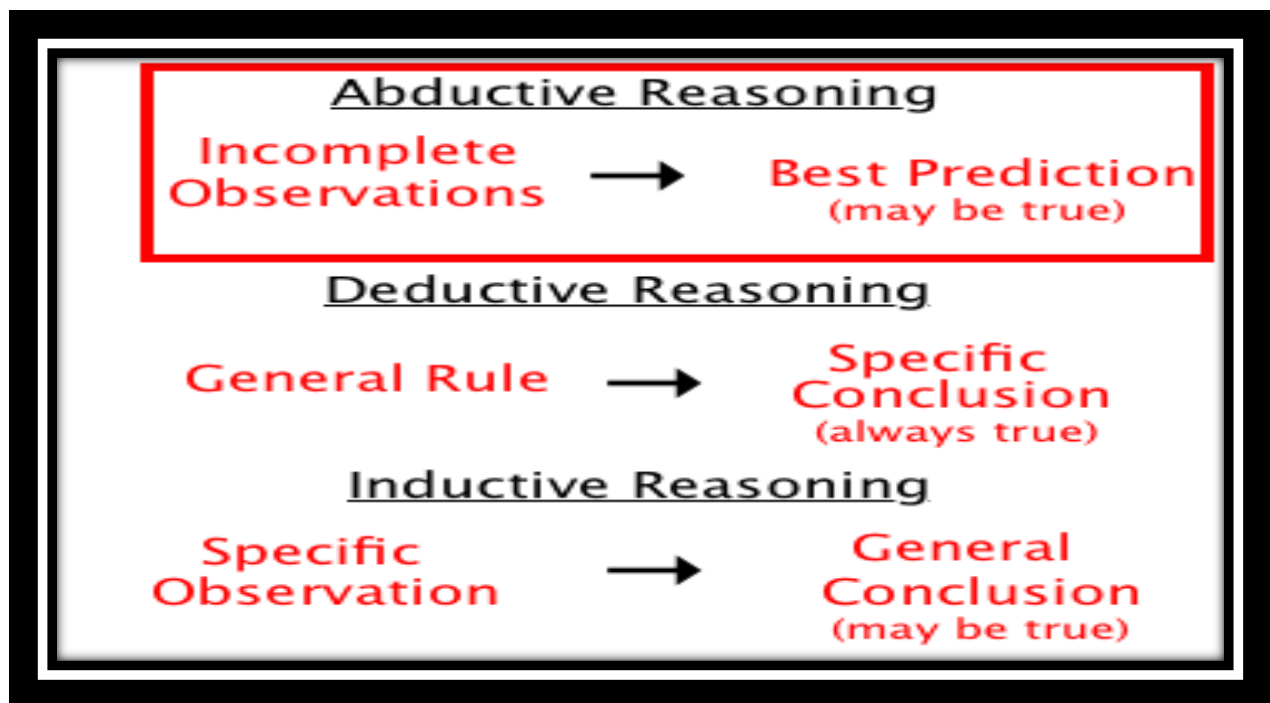


Figure 4.3: Deductive, inductive and abductive approaches

Source: Adapted from Bryman and Bell (2015)

4.4 Research Design

Several authors have provided various definitions for research design. Flick, (2011) defined it as a general plan showing how data is collected and analysed in order that

the research question is adequately answered. On the other hand, Parahoo (2014:164), defined research design as a comprehensive explanation of the specific methods of data collection; where the data will be collected? when it will be collected?, and how gathered data is going to be analysed. According to Thakur (2005:164), a research design is a complete and detailed proposal which details how the target population will be selected, as well as how data is collected, edited and analysed in the research. Babbie (2008:74), on the other hand, described a research design as a comprehensive draft of how a research is going to be conducted, while Collis and Hussey (2014) are of the opinion that research design is simply the strategic plan that the researcher follows in terms of data collection, the type of instrument used and the way the data is analysed. According to Thakur (2005:164), a research design's main aim is to make it possible for the researcher to tackle and answer the research question, and also address the aim and problem as clearly and distinctly as possible.

Van Wyk (2010) cited a research design's role as that of determining tone and distinctiveness of the association between the identified research problem and the selected processes to be conducted in the research. This means therefore that participants of the research, the data collection instruments and data analysis methods must be carefully considered and selected in order that the research questions are adequately and effectively answered while also fulfilling the study objectives (Van Wyk 2010). When the above processes are done effectively, the validity and reliability of the research findings are maximised (Terre Blanche, Durrheim and Painter, 2006:34).

In this study, the researcher used the recommendation that clear study objectives must be set at the beginning. This was done so that the selected research would address the objectives effectively. The following research questions were formulated in Chapter 1:

- What types of PMSs are the selected manufacturing organisations using and to what extent do these organisations use integrated performance measures in the form of SPMMSs?
- Can the balanced scorecard be the appropriate and suitable SPMMS for the manufacturing industry?

While Silverman (2005) highlighted the importance of setting out clear research approaches before any data is collected for a study, Thomas (2011) described the existence of two such approaches that the researcher can choose from and which are popular with scientific researchers: quantitative and qualitative research (Barnham, 2015:838). Both approaches, according to Silverman (2005), have their own advantages and disadvantages, but the most important thing is for the researcher to choose the approach that would address the aims of the study. Although Johnson and Christensen (2012) agreed that a researcher should choose the best fit between the two main approaches: (quantitative and qualitative), Creswell and Clark (2007:5) emphasised the need to understand that both quantitative and qualitative approaches will not yield a clearer picture and understanding of research problems if they are used in isolation. Hence the two authors (Creswell and Clark, 2007:5) suggested the use of both approaches in the same research, thereby creating a third paradigm which they named the mixed methods approach.

The three approaches namely qualitative, quantitative and mixed approach will now be discussed as follows:

4.4.1. Qualitative approach

According to Denzin and Lincoln (2005), qualitative research is an approach of non-numerical data gathering and analysis which seeks to investigate, reveal and interpret meanings, symbols, behavior and perceptions of people in their social lives.

Additionally, Roberts (2014:4) stated that the qualitative approach seeks to identify the observer in the world and therefore requires the researcher not to impose his / her own viewpoint so that respondents can have their own perceptions about the research phenomena. Since qualitative research requires the researcher to investigate the meanings and interpretations of respondents of their personal daily lives, the methodology seems to be framed more by the target population (respondents) than by the researcher (Bryman and Allen, 2011). According to Feilzer (2010:6-16), the best way to achieve the correct respondents' interpretation is by using open-ended in-depth

interviews. This allows the researcher to develop the questions throughout the process, thereby giving room for the respondent to expand on information. Researchers usually use qualitative research only when there is need to examine the meaning of an observation, not to look for causality between study variables (Feilzer, 2010:6-16). According to Thomas (2011), the common sampling technique in qualitative research is non-probability, mainly because the researcher uses certain characteristics of the target population to select a sample.

4.4.2. Quantitative approach

Creswell (2012) posited that in quantitative research, the researcher collects physical and hard data which can in turn be statistically analysed. Creswell (2012) also stated that such raw data from quantitative research can further be used to reveal and explain relationships amongst studied variables. Punch (2014) was of the opinion that quantitative research is associated with the deductive reasoning approach of first formulating hypotheses; collecting and statistically analysing data; testing the hypotheses, then determining whether to accept or nullify the formulated hypotheses. Punch (2014) further stated that the nature of a quantitative research can be descriptive, which means associations between variables can be established or it can be experimental, meaning that causality of the above associations can also be established. The main characteristics of quantitative research as cited by Gray (2017) are:

- The collection of data is usually done through structured study instrument;
- The sample is usually large so that it can fairly represent the target population;
- High reliability of quantitative research allows the study to be repeated in the exact same way it was conducted before;
- The research begins by establishing and clearly defining a research question(s) to give direction on how objectives can be addressed;
- The research is carefully planned and methodologies are decided upon before data is even gathered;

- Data is presented graphically in graphs, charts and tables, making it easy to understand and interpret; and
- Statistical analysis in the quantitative approach allows the researcher to examine associations and cause-effect relationships, meaning that results can be fairly generalised to other similar populations.

4.4.3 Mixed Method Approach

Cooper and Schindler (2006:219) cited that when a researcher combines quantitative as well as qualitative in one study, the combination is called triangulation. However, Creswell (2009:4), is of the opinion that a combination of the two methods should be called a 'mixed method approach' since the two methods are literally 'mixed'. Klenke (2008) described the strength of this mixed approach as that of assisting the researcher to test hypotheses more effectively. Creswell (2013) stated that although results at the end of the study are incorporated when reporting, collection and analysis of data is done separately since data collection instruments usually differ.

Walliman (2011) also agreed that data collected using both quantitative and qualitative approaches would be more reliable since the mixed methodology is more powerful. Creswell (2013) however suggested that the mixed approach be used only in research where an integration of the two approaches gives a better understanding to the study, otherwise it is not necessary to combine them. Creswell (2013) cited that a mixed approach is also suited for a study where one method's results are used to inform the other method. In this research, findings from the quantitative research on the selected manufacturing companies in KZN were going to be used as the basis for developing a SPMMS (BSC) in the second stage, which used qualitative research. The formulated hypotheses in this study also highlighted the possibilities of causal relationships. The mixed approach was therefore necessary to clarify the results of Stage One (quantitative research) by developing a BSC and applying it to a real case company in Stage Two of the research. It had already been stated that the research was going to be two-fold, hence the need for different approaches to collect different types of information for each stage. According to Creswell (2013), when a mixed approach is

employed, the results of the findings of the qualitative research can be generalised. Since the intention of the researcher in this study was to develop a SPMMS that could be generalised to manufacturing companies in the target population, a mixed approach was deemed appropriate for the study. Taking note of Creswell's (2013) suggestion, the researcher also collected and analysed results from the two approaches separately. Creswell (2013) also summarised the mixed approach by way of diagram, as shown in Figure 4.4 below.

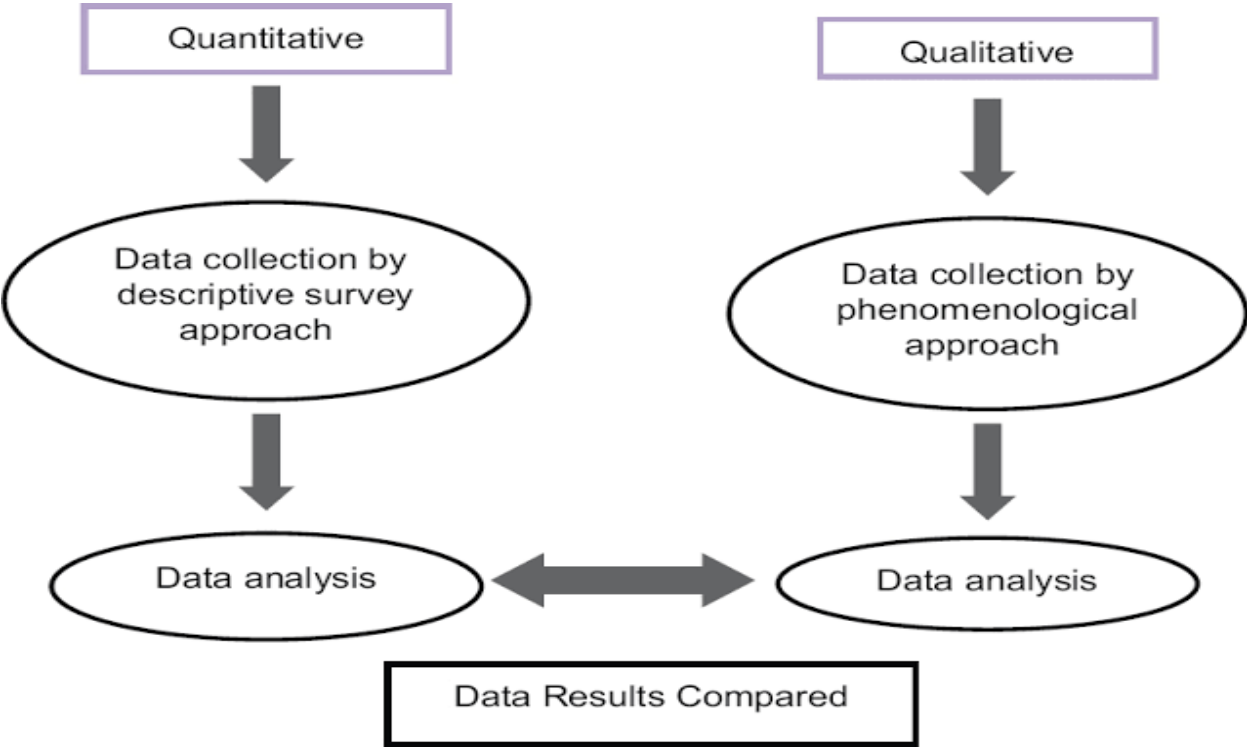


Figure 4.4: Mixed research approach
Source: Creswell (2013)

4.5 Research Methodology / Strategy

Research methodology or strategy has been defined by different authors, while some authors have not defined it but have rather chosen to describe it. According to Saunders et al. (2007), the terms research methodology and research strategy are interchangeable. Myers (2009:23) describes methodology as techniques that a

researcher uses to gather and analyse research data by building up from fundamental assumptions. These techniques complement each other and allow a critical evaluation of the findings of a study for its validity and reliability. A methodology should therefore deliver findings that suit the objectives of the research. Wellington, Bathmaker, Hunt, McCulloch and Sikes (2012:97) viewed methodology as a process of obtaining knowledge about different approaches and then justifying the best approach selected. Walter and Anderson (2013: 10) defined methodology as the manner in which the researcher conducts a study: from identification of the problem to establishing the questions to be asked and the techniques to be used in data collection, analysis and presentation.

A research strategy is usually split into three groups: historical, experimental and descriptive (Saunders et al., 2007).

4.5.1 Historical Research

This approach critically analyses past events so that present and future trends can be determined. Saunders et al. (2007) cited historical research as being difficult to employ in a study.

4.5.2 Experimental research approach

Saunders et al. (2007) described experimental research as a strategy where the researcher controls or manipulates independent variables and then observes the changes and variations in the dependent variable. Experimental research is conducted by examining the relationship between the factors and then judging them against the expectation of the research outcomes (Saunders et al., 2007).

4.5.3 Descriptive research approach

Bryman (2012) described descriptive research as a method where the researcher observes the respondents and then describes their behaviour without bias and without

manipulating the study in any way. According to Thomas (2011), there are three groups of descriptive research, as discussed below:

4.5.3.1 Case study

Thomas (2011) defined a case study as a research method that seeks to investigate a unit, for example a person, a group of people, a group of companies or a province. Case studies are used to investigate real-life situations within the social unit then generalise the results to a population (Silverman, 2013). Mertens (2015:245) stated one distinct advantage of the case study as that of enabling the researcher to validate evidence since documents are usually available in case study research. An example is the current research where the researcher could, for example, ask respondent companies for financial reports to confirm revenue figures and ratios. Gray (2009) agreed with Mertens (2015:245) that there are more ways to gather data for a case study research through filed documents, observations and focus groups. Both structured and semi-structured interviews and follow-ups can be conducted since the sample is small.

4.5.3.2 Survey approach

May (2011) described a survey as a research method that randomly or conveniently selects a limited number of respondents and asks them to respond to questions, usually within the use of a questionnaire. According to Bryman and Bell (2011), a survey is usually employed in a quantitative study to examine the existence of causal relationships amongst variables.

There are different types of surveys, which May (2011) summarised as shown in Table 4.2 below:

Table 4.2: Survey methods

Method	Purpose	Advantages	Disadvantages
Questionnaires	Conducted in order to gather large volumes of information in a short period of time	Members of the sample group can remain anonymous Considerably cheaper than most of the other primary data collection methods Possibility of generating large amount of data	Difficulties of ensuring greater depth for the research The problem of the 'first choice selection'
Interviews	Conducted in order to reflect emotions and experiences, and explore issues with a greater focus	The possibility of directing the process of data collection The possibility of collecting the specific type of information required	Great amount of time required in order to arrange and conduct interviews and primary data collection. Additional costs might be incurred, associated with arranging and conducting interviews, travelling etc. Potential for interviewee bias
Documentation review	Conducted in order to study issues that have developed over a specific period of time	Possibility of retrieving comprehensive information	Challenges associated with access to documentation; Inflexibility of the research process

Source: May (2011).

➤ **Interviews**

According to Oltmann (2016:15), interviews are usually employed in qualitative research by having conversations with respondents to get their perspectives on the topic being studied. Interviews can be conducted over the telephone or face-to-face, whereby the researcher asks the respondents questions and notes down their verbal responses.

Oltmann (2016:15) also indicated three types of interviews as follows:

- **Structured interviews:** The researcher asks respondents to answer pre-determined questions in a set order and then compares the different responses given to the same questions.
- **Unstructured interviews:** This is an informal type of data collection where the researcher does not prepare the questions prior to the interviews. Data collected this way might be unreliable and biased because if questions are not pre-determined, the researcher might fail to formulate them in exactly the same way when asking each respondent. Comparison of responses will therefore be difficult.
- **Semi-structured interviews:** This is a method of data collection which mixes both structured and unstructured interviews. The researcher first asks all the interviewees to answer the pre-determined questions in the same order, then formulates additional follow-up questions for further clarity if needed.

4.5.3.3 Comparative research

This type of research entails a researcher comparing differences and similarities between two groups of respondents in order to draw a conclusion about them. It is usually done to understand for example, different cultures, societies, demographic or employment data between groups.

There are numerous strategies, approaches and methodologies in business management literature that researchers can select from when conducting research, which is why Saunders et al. (2009:141) advised the researcher to clearly understand the research objectives first and how best the objectives can be achieved. Sekaran (2006:119) also agreed that a researcher's final choice of approach, strategy or mix of approaches should be dependent on the research questions and the identified objectives.

Based upon the above suggestions by Saunders et al. (2009) and Sekaran (2006:119), the following research strategies were selected:

i) Positivism vs Interpretivism

As already stated in section 4.1, this study is two-folded. The first stage investigated empirical data on existing PMSs, tested causal relationships of the variables and then tested the formulated hypotheses. The second stage, on the other hand, aimed at developing a SPMMS for manufacturing companies based on literature review and findings from the quantitative study. The attributes of positivism that have been highlighted above made a positivist approach more appropriate for the first stage of this study. The researcher's decision to lean towards a positivist approach for the first stage was also influenced by Krauss, (2005) who stated that in interpretivism, causality cannot be tested. Since (Rompho and Siengthai, 2012:482-514) suggested positivism as a better option when the aim of a research is to test cause-effect relationships and associations between variables, the positivist approach was more appropriate for the first stage of this research. The findings of this research are also going to be generalised to other manufacturing companies, which would not be possible had an interpretivism approached been used.

ii) Deductive vs. Inductive

In the first stage of this study, the researcher developed hypotheses based on the literature review, and then selected a suitable research strategy to test the hypotheses as suggested by Silverman (2013). It was also the aim of the research to examine whether the observed phenomena (existing PMSs in the sampled manufacturing companies) are within the expected guidelines for PMSs and SPMMSs, based upon previous research as discussed in Chapter 3 (literature review). The deductive approach was therefore chosen for the first stage of the research as opposed to the inductive, which starts with observations first (specific) then moves to the general (Bryman and Bell, 2011). The second stage was also dependent on findings from the literature review and from the empirical research (observations) to develop a SPMMS that is suitable for manufacturing companies. Both deductive and inductive approaches were used in this research, resulting in a mixed approach, which employed the

deductive (quantitative) approach in stage one and then the inductive (qualitative) approach in stage two (Bryman and Bell, 2011).

iii) Quantitative vs. Qualitative

The first stage of this study required gathering data on existing PMSs in sampled manufacturing companies in KZN and investigated the causal associations of the studied variables and the extent to which these companies are using financial as well as non-financial measures of performance in the form of SPMMSs. The second stage then needed to explore possible solutions through qualitative methods by developing a suitable SPMMS. These complementary features of both deductive and inductive approaches motivated the researcher to employ the mixed methods approach by combining quantitative and qualitative research approaches in the same study.

Choosing the quantitative approach as the best fit for the first stage of this study was done recognising the following parameters identified by Thakur (2005:165) for this quantitative paradigm:

The approach allows the researcher:

- To test cause-effect relationships between variables;
- To develop, test and support or reject hypotheses;
- To have no control or influence on the research; and
- To have more trustworthy results because of the scientific nature of a quantitative research study.

The choice of a quantitative approach for the first objective and first stage of this research was also due to the ability of the data collection method (the questionnaire) to economically collect a large amount of data, according to Thakur (2005:165). The target population in this study was ten manufacturing companies and the total number of administered questionnaires was 352, which was large. This allows greater opportunity for the researcher to retain control of the research process (Thomas, 2011). Moreover, since Thomas (2011) stated that statistical analysis is possible in quantitative research, the researcher could generalise the results of the findings of this

study to other manufacturing companies. One of the objectives of this research was to develop a SPMMS (BSC) for manufacturing companies in order to better understand associations and causality between the study variables: strategy, PMSs and overall organisational effectiveness and performance, through the incorporation of financial and non-financial measures in the form of SPMMS. For this reason, a quantitative research was more appropriate since it would allow results to be generalised and the developed model would therefore be applicable to other manufacturing companies.

As advised by (Wiley, 2009: 251-274), the researcher considered the time, convenience and costs involved in conducting the research, and therefore deemed quantitative research design in the form of questionnaires appropriate for the first stage, primarily because of the descriptive nature of the research. A questionnaire, according to Vik (2010), enables the researcher to collect huge amounts of data from a large number of respondents at the same time.

It was not the intention of the researcher in the second stage of this research to look for causality amongst variables or to formulate and test hypotheses (as this had already been done in Stage One), but to find a solution (develop a SPMMS) for KZN manufacturing companies to measure performance effectively. A qualitative approach was therefore selected to gather data for the second stage of the research. A qualitative approach was also necessary in the second stage since it was necessary for the researcher to come into contact with individuals and groups from the KPPC during the development of the SPMMS as this company was chosen as the case study, which according to Gray (2009), assists the researcher to better understand the phenomenon in a qualitative research study.

This research therefore employed a convergent mixed research design since both quantitative data and qualitative data were gathered and analysed separately. As cited by Cresswell (2014), data for a mixed convergent approach is collected and interpreted separately, which is what the researcher did in this study as follows: firstly, quantitative methods were employed to collect, analyse and present data for ten KZN manufacturing companies in order to find out what types of systems they were using to

measure performance; and secondly, findings from the literature review, empirical findings from the conducted research and qualitative data gathered from interviews with the case company, observations and from focus groups at KPPC were used to develop a SPMMS for manufacturing companies.

iv) Choice of a case study approach

During the development of the SPMMS in the second stage of this research, a case study approach was used on a single company. A case study, according to Thomas (2011) and Silverman (2013), is usually employed to investigate a unit or small group and examine real-life situations within that social unit. This also influenced the researcher's choice of a case study in the second stage as she conveniently selected a company that was already in the initial stages of changing its PMS to a more integrated one. After the development, there was going to be a need to test if the developed SPMMS could be applied in real terms to a company. Hence the choice of a case study for the BSC development stage. It would not have been possible to develop SPMMSs for all ten sampled companies and apply them to each particular company at the same time within the allocated time for the research. This also justifies the use of the qualitative approach in the second stage of the research since data gathering would involve direct interaction with individuals from the case company through interviews, observations and focus groups.

4.6 Target Population

A population's subjects or objects, as stated by McBurney and White (2009:248) must possess similar characteristics for the researcher to draw participants from. However, in a research study; a population is too large to be studied conveniently. From Figure 4.5 below, the population for this particular study would be all manufacturing companies in KZN. This number was going to be too large, so the researcher reduced it by targeting only those that were registered, thereby reducing the population to 110 manufacturing companies according to KZN Top Business (2018). The population

was further reduced by concentrating on only medium to large manufacturing companies in the province so that data could be gathered and analysed. The Minister of Small Business Development in South Africa, Lindiwe Zulu, published a government gazette in Business Insider SA (2019), stating that company sizes had been changed (de Wet, 2019). For a manufacturing company, medium size would mean 51 employees and above with an annual revenue of R51 million or more. Although some companies met one of the criteria, only 37 met both criteria, based on facts and figures from KZN Top Business (2018). Some of the companies would have enough revenue but not meet the number of employees to be considered a medium or large company. This was more popular amongst companies that produce equipment. Since only 37 companies met both criteria of annual revenues over R51 million with over 51 employees to be classified as medium to large, they became the target population in this study. This target population of 37 companies, however, was still exceedingly huge for all of its members to be surveyed so the researcher selected a sample of 15 companies which were easily accessible to the researcher and where the researcher was certain to receive responses from. Information and permission to conduct a study letters were sent out to all 15 companies (these are the accessible population in the diagram below). Out of the 15 conveniently selected companies, 13 signed letters of permission to conduct a study were received. However, some of the companies that responded, although they had branches in KwaZulu-Natal, had their head offices in Johannesburg and Cape Town, so they did not qualify to be in the sample. Ten companies that complied were therefore chosen (the sample).

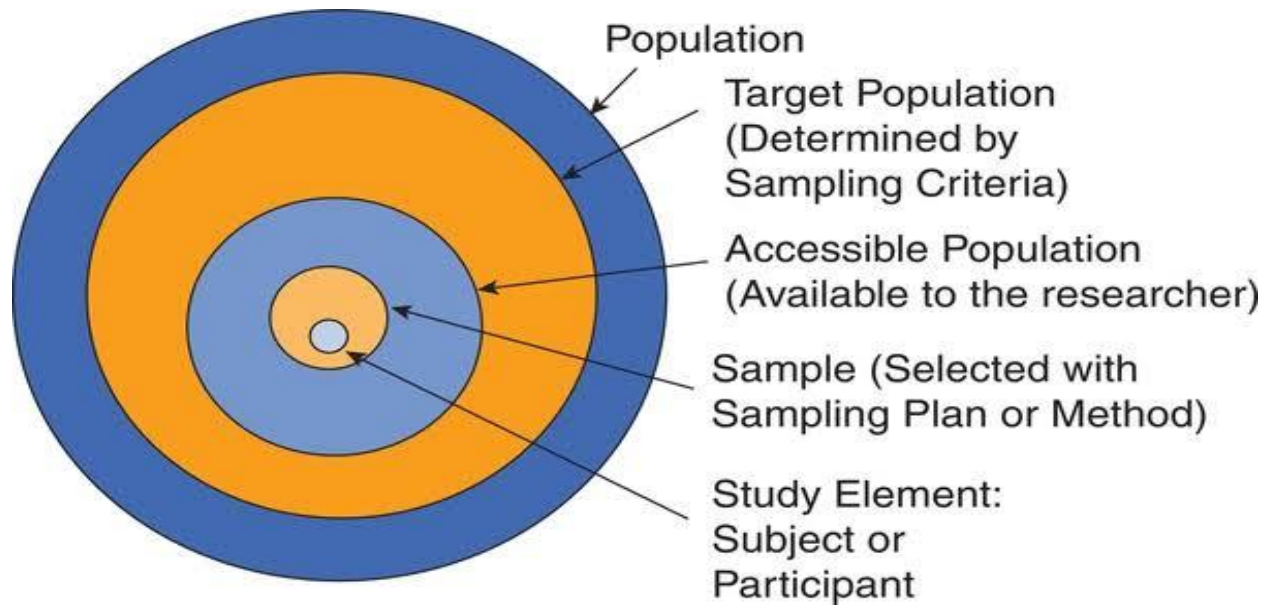


Figure 4.5: Population, target population and sample in research

Source: Author's own

4.7 Sampling Strategy

According to Adler and Clark (2011:100), sampling involves choosing research participants from a huge population. A sample is a group of people or objects chosen from a population for a particular research. A sample must represent all of the population's characteristics so that the findings from the sample can be generalised to the whole population (Jacobs, 2010). Sample size should therefore be based more on the fair judgment of the researcher as opposed to being a statistical calculation (Wiid and Diggines, 2015:202). The two authors were also of the opinion that, although the selected sample needs to be a fair representative of the targeted population, it should also not be too big that it becomes difficult to be managed economically, efficiently and practically.

Sampling enables the researcher to reduce a large population to an appropriately smaller sample size (Bryman, 2012). According to Bryman (2012), the most common methods of sampling used by researchers are probability and non-probability sampling.

4.7.1 Non-probability sampling

McBurney and White (2009: 249) described non-probability sampling as a strategy where the researcher uses reasonable judgment to select a sample for the study. The probability of a subject or object being selected for a study cannot be calculated in non-probability sampling, which makes it impossible to be sure how well the sample has been represented. This, according to McBurney and White (2009), is the main shortfall of non-probability sampling. However, a final sample of 10 companies out of a target population of 37 was considered a reasonable and fair representation by the researcher. Moreover, the sampled companies were not all from one area but from different locations in KZN. The advantage of non-probability sampling over probability sampling, as quoted by Creswell (2014), is the lower cost and effectiveness when collecting data.

The specific type of non-probability sampling used in this research is convenience sampling. As the name suggests, convenience sampling is about choosing a selection of subjects or objects based on accessibility and proximity to the researcher (McBurney and White, 2009: 249). Using the company size criteria as published in the Business Insider SA by minister Lindiwe Zulu as stated above, companies were conveniently selected based on them being in the manufacturing sector and they had to be medium to large sized. Business Insider SA classifies companies based on sector, number of employees and annual turnover. Medium companies in this case would have 51-200 employees and an annual turnover of R51 – R200 million, while large manufacturing companies have 201 employees and above, with more than R200 million in annual revenue.

Convenience sampling was selected because it suits the research problem as the researcher would need to develop and also test if the developed model was applicable to the case company and therefore be able to generalize findings to other manufacturing companies. The researcher's selection of the sample was based on: a) the company should be in the manufacturing industry, b) be formally and legally registered, c) be based in KwaZulu-Natal, and d) be medium to large sized based on minister Lindiwe Zulu's classifications mentioned above.

4.8 Data Collection

According to Schirch (2013:40), data is unedited, unprocessed (raw) information that has been collected from primary and secondary sources. As cited by Babbie (2013), the nature of the study (whether quantitative or qualitative), determines the data collection methods to be used. Ghauri and Gronhaug (2005) further divided data into primary and secondary data. The authors described primary data as that which the researcher gathers from respondents during the study (it is new information), while secondary data referred to existing data not collected by the user. Secondary data is the data found during the literature review. Creswell (2009:15) classified data into quantitative, qualitative or mixed methods as shown in Table 4.3.

Table 4.3: Qualitative, Quantitative and Mixed data collection methods

Quantitative Methods	Qualitative Methods	Mixed Methods
Pre-determined	Emerging methods	Both pre-determined and emerging methods
Instrument based questions	Open-ended questions	Both open and closed-ended questions
Performance data, attitude data, observation data, and census data	Interview data, observation data, document data, and audio-visual data	Multiple forms of data drawing on all possibilities
Statistical analysis	Text and image analysis	Statistical and text analysis
Statistical interpretation	Themes, patterns interpretation	Across databases interpretation

Source: Adapted from Creswell (2009:15).

Cooper and Schindler (2006:77), assert that researchers need to choose the appropriate method suitable for their study. For this research, a systematic literature review was used to identify and define the study variables and to define the history and importance of performance measurement and the systems used to measure it. Secondary data was also used in the literature review to study the relationships between the variables of performance measurement, strategic management and organisational performance. The background and importance of manufacturing was

also studied by use of secondary data in the form of academic journals, websites, textbooks and articles from newspapers.

As opposed to secondary data collection, Yin (2009:8) cites experiments, surveys, interviews, observation, focus groups, archival analyses, histories and case studies as the techniques that are usually employed to gather primary data. Sekaran (2006:223) elaborated on this by naming questionnaire administration, observations and interviews as the three main techniques used for data collection.

Survey data collection through the use of questionnaires can be used to describe the attitudes, opinions, trends and behaviours of a population when such data has been statistically analysed (Creswell, 2009:145). This statistically analysed data, according to Saunders et al. (2009:144), can be used to test hypotheses and associations between variables and possible reasons for such associations. Since questionnaires can be customised to meet the specific objectives of any research, they have become a very popular data gathering tool (Sekaran, 2006:236). Data collection methods were further summarised by Schirch (2013: 54) as shown in Figure 4.6 below:

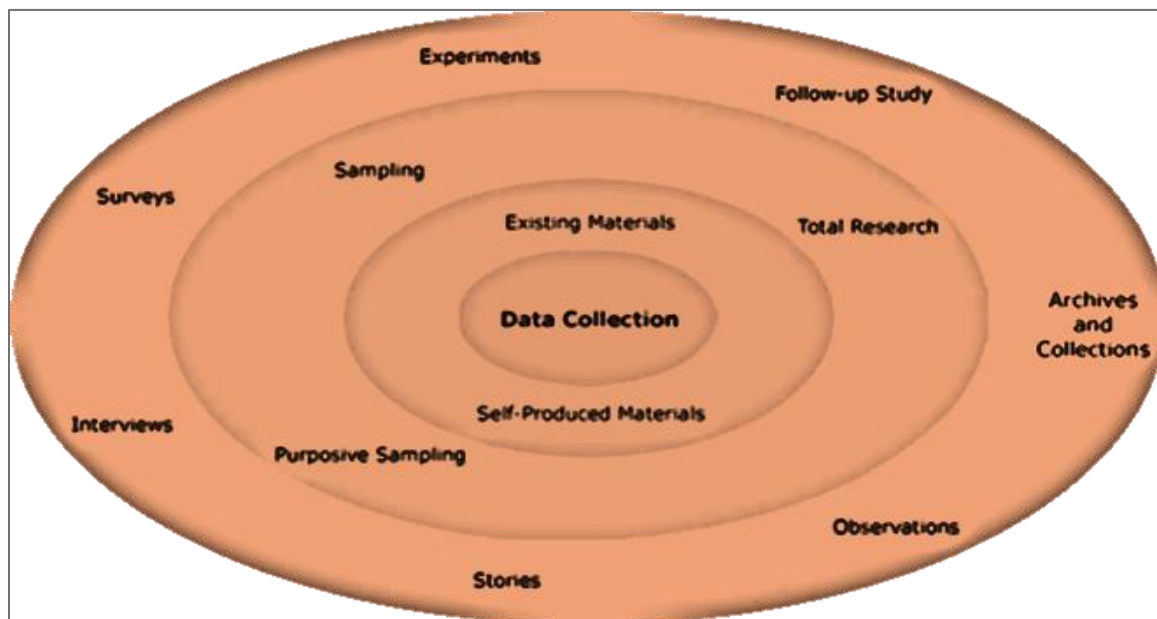


Figure 4.6: Data gathering instruments
Source: Adapted from Schirch (2013: 54)

Data in this research was collected by means of both primary and secondary sources. To gather primary data for the first stage of the study, the researcher conducted a survey by using a self-administered questionnaire as the research instrument. The decision to use a survey questionnaire for data collection for Stage One of the research was influenced by the following facts as stated by Thakur (2005:16):

- Surveys are relatively inexpensive: for this research, questionnaires were hand-delivered and collected, making it even cheaper;
- Surveys are extensive in that they can be used to identify similarities and traits of a large population and draw conclusions, which is not achieved by other research methods;
- Flexibility: There are many simple ways to administer surveys. For example, via e-mail, online, telephone, via social media and face-to-face; and
- Dependability: Since surveys are conducted anonymously, they provide more honest, clearer and distinct responses compared to other research methodologies. However, researchers need to guarantee and state anonymity and confidentiality on the questionnaire.

In addition, the second part of the research was about developing a model for manufacturing companies, which meant that this stage was more of a qualitative study than a quantitative one. A case study strategy was therefore employed for the second stage by selecting one company out of the ten for the development of the model. Using guidance from Thomas (2011), an empirical investigation was conducted at the case company to explore real-life events as the KPPC went through all the stages of developing a BSC for their performance measurement. The decision to choose KPPC as the case study was influenced by the fact that this company was already trying to make changes to a more integrated PMS with the help of their quality assurance manager who had just joined the company and who has knowledge and experience of handling such projects as she had been involved in such a project in her previous company. The CEO of KPPC was also willing and available to answer interview questions and he also allowed the researcher to attend brief sessions with executive

management, sub-group meetings with the implementation team and all the workshops that were conducted during the development stage of the SPMMS. The CEO and executive management also allowed the researcher to attend the group meetings on condition that she would not be allowed to record conversations but could only write down notes. This was agreed upon for purposes of confidentiality. The researcher was also allowed to participate in the meetings and could ask further questions for clarification. This type of data collection method, according to Schirch (2013: 54), is called participant observation. Moreover, validity is stronger with the use of additional strategies along with observation in this study, such as interviewing, document analysis, focus group discussions and survey questionnaires (Schirch, 2013:54)

Semi-structured face-to-face interviews were conducted with executive and senior management of the company (Appendix D). The aim was to find out what strategies the company had formulated and how they intended to have these implemented. It was also necessary for the researcher to have as much information as possible on the proposed SPMMS in order to be sure that guidelines had been followed and also so that follow-up was possible during the focus group meetings.

For the model development stage, the researcher also used document analysis for purposes of data collection by using information from company meeting minutes, reports, attendance registers and financial records.

During the sub-group meetings and workshops that were conducted at KPPC when they were developing their SPMMS, the researcher used the selected implementation team as a focus group as an additional data collection method. Creswell (2014:205) described a focus group interview as a qualitative method of data collection where a small group of people engage in a guided discussion about a new product, or a particular topic. In this case, the discussion was on the development of a SPMS. A focus group consists of a small group of a maximum of ten people who are carefully and deliberately selected by the researcher to gather data on a defined topic. In this study, however, the researcher did not choose the focus group but used the implementation team that had been selected by the company to run the project. This

type of data gathering method usually takes place in a room and in a relaxed atmosphere and environment (Steinberg 2011). The focus group discussions were conducted under the guidance and leadership of the quality assurance manager who had been selected as the scorecard champion as it is important to have a moderator during focus group discussions (O'Leary, 2010:196). Focus group discussions were conducted after each session in order to have more insight from participants on whether they understood the reasons and need to develop the new SPMMS or not, as well as what they understood would be the benefits of the developed BSC to themselves as individuals, to their departments and to the organisation as a whole.

4.9 Research Instrument

Trochim and Donnelly (2006:89) cited a questionnaire as a set of written questions used by researchers to collect data from respondents. Cooper and Schindler (2006:362-363) highlighted questionnaire construction as one of the most important stages of a research. According to the authors, this is because, besides the fact that the questions have to be systematic, they should be able to address all the identified objectives of the study. In this study, the questionnaire had to address all the study variables: strategy, PMS and organisational performance.

Two questionnaires were constructed for this study. The first questionnaire was meant to identify the types of PMSs, financial information and different strategies used in the selected manufacturing companies. To achieve this, ten questionnaires (clearly labeled: CEO / Owner / Executive manager) were administered to executive managers of the selected sample. The executive manager questionnaire consisted of five sections as follows:

- In section one, respondents needed to complete personal information about themselves, like level of position, experience and qualifications.
- The second section was on company profiles, like nature of the business and number of people employed.
- The third section asked respondents to indicate management approaches to strategy (formulation, implementation, evaluation and re-formulation).

- The fourth section's aim was to find out the specific types of PMSs being used in the sampled companies and establish whether they were integrated SPMMSs or not. Integrated SPMMSs incorporate financial as well as non-financial measures in one PMS. In this section, questions on the new dimension / perspective to the BSC that was introduced in the literature review (Chapter 3), supplier performance, were also asked since it is also going to be the additional perspective in the developed model.
- The last section asked respondents to indicate information on organisational performance by indicating average annual sales turnover, sustainability, profitability and liquidity ratios.

The second questionnaire was intended to validate the responses of the executive managers in terms of their approaches to the actual implementation of the formulated strategies. Employees from top to bottom are the ones who are involved in the implementation of strategies so it was necessary to find out if objectives, strategies, visions and missions, performance evaluations, feedback, rewards and incentives, training needs, etc. were actually being communicated to all employees. This second questionnaire was clearly marked (Employee) and was administered in such a way that all employee levels and departments in each sampled firm were fairly represented. The questionnaire had two sections, with the first one requiring personal details while the second one was to gather information on the companies' effectiveness in implementation of strategies through its employees.

Questions were answered by means of a six-point Likert-type Scale, where 1 indicates 'strongly disagree' and 6 represents 'strongly agree'. Questionnaires consisting of a total of ninety-two statements for executive managers and twenty-six statements for all other employees were hand-delivered to the respondents by the researcher. The questionnaires for the executive managers took about fifteen minutes to complete, while the employee questionnaire took about five minutes. The researcher had made prior arrangements with the Chief Executive Officers and managing directors of the sampled companies. The agreement was that the researcher would hand deliver the

questionnaires, ask the respondents the questions from the questionnaires and tick the appropriate boxes as selected and in front of the respondents. The decision to hand-deliver and personally collect data was influenced by prior researches where questionnaires ended up being misplaced by the respondents, as well as to collect data as efficiently as possible since this was done during the production times of the various manufacturing companies. The few executive managers who could not complete the forms the same day due to important meetings and work were then given two weeks to e-mail back the completed questionnaires. The decision to hand-deliver and collect the questionnaires was also based on the fact that this is an economical method, response is faster and there is easy follow-up as compared to the post where mail can go missing or be misplaced. Collecting survey data via e-mail could have been a faster way as well, but it was going to be less economical for the respondent companies who would then need to print many questionnaires for staff to complete. Also, e-mailed questionnaires would not guarantee anonymity.

The choice of a questionnaire as the survey instrument was also influenced by the following advantages of questionnaires, cited by Vik (2010:24):

- they are economical and relatively easy to analyse;
- they are simple to administer; and
- Since questions are predetermined and presented in a uniform manner, researcher biasness is reduced.

Completed questionnaires were checked for errors and filed in the researcher's working file.

4.9.1 The Cover Letter

Every questionnaire that was administered had a cover letter (Annexure B), attached to it. The letter, typed on a Durban University of Technology letterhead, explained the following about the study: a) the title, b) the significance, c) the value of each respondent's participation, d) the ethical consideration and e) that participation was

voluntary. It was also stated in the letter that participation was going to be greatly appreciated. Both the supervisor and the researcher had signed this letter.

4.9.2 Pilot Study

Conducting a pilot study confirms the validity and reliability of the research instrument (Sunders et al., 2011:201). Cooper and Schindler (2014:603) stated that for a pilot study to serve its purpose and for the questionnaire to be considered valid, the pilot sample should be at least 10% of the study sample. Newing (2011:65) cited that a pilot study's main purpose is to check how long it would take the respondents to complete the questionnaire and to ascertain if the questions were too complicated or too easy, or if the questionnaire was the right length (not too short or too long) so that ambiguities are eliminated before administering it to the actual respondents. A pilot test was also conducted at a company where the researcher used to work in order that reliability and validity of the research instrument were ensured. This one company represented 10% of the sample, since there were ten companies in the sample. This percentage, according to Cooper and Schindler (2014:603), is a fair representation of the sample. The researcher selected six senior managers and one employee from each department for the pilot study.

The pilot test was conducted as follows:

- Questionnaires were administered to participants in the same way they were going to be administered during the main research;
- Participants were asked to mark questions they felt were difficult or ambiguous;
- The researcher recorded the time the pilot group took to complete the questionnaires so that she could decide whether it would be reasonable or not;
- The difficult questions were discarded: and
- Difficult questions that were not completed in full or as expected were re-worded and re-scaled.

Initially, the executive management questionnaire consisted of ninety-three statements but after the pilot study, only one item was removed to increase authenticity. The

employee questionnaire initially had twenty-eight statements. Two that were worded differently but asked the same information (duplicated) were removed.

4.10 Data Analysis

According to Sekaran (2003:301), data analysis involves the extraction of useful information from raw data, applying necessary statistical analysis so that it can be presented in a more meaningful and easy to understand manner. Sekaran (2003:301) also summarised the process of data analysis by use of a diagram as shown below:

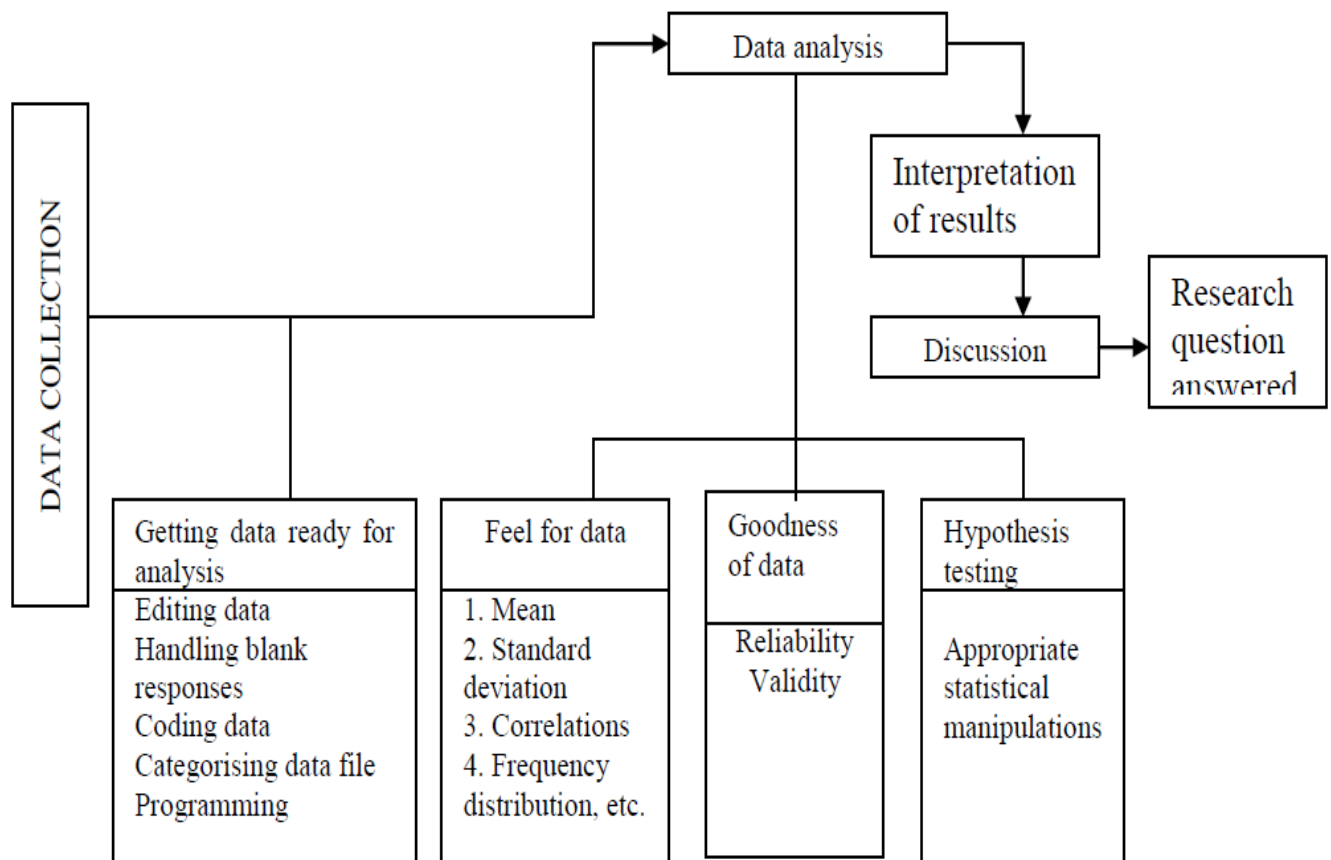


Figure 4.7: Data Analysis Process

Source: Sekaran (2003:301)

The researcher took these steps in the data analysis process:

4.10.1 Data editing

Shukla (2008:95) described data editing as a process of converting data from a raw form to usable information, checking the data for accuracy and completeness so that it can be coded and tabulated. Zikmund, Babin, Carr and Griffin (2013) suggested editing data twice to assure accuracy and consistency before capturing it. In this study, data was first edited to make sure that all questions were answered. If 80% of the questions on a questionnaire were not answered, the questionnaire was not used. However, errors were minimised since the researcher asked the questions face-to-face and ticked the appropriate boxes in front of the respondents herself. Quantitative data in this research was edited and then captured onto an excel spreadsheet in a format that would allow data to be loaded onto SPSS. Captured data was analysed by the statistician, who also performed the statistical analysis using SPSS.

4.10.2 Coding

Coding was defined by Creswell and Clark (2011:208) as the process of putting data in categories and marking each category with an identifying name, symbol, colour or word. This transforms the data from raw to a form that is suitable for capturing onto a computer. In this research, all questionnaires received were also coded to facilitate capturing onto an Excel spreadsheet. The coding was done as follows:

- A code was first assigned to each of the respondent companies, for example: KPPC stands for the KZN Printing and Packaging Company. All completed questionnaires from each company were kept in one folder.
- A number from 1 to 350 was assigned to each questionnaire as data was being captured. This was done for cross-referencing.
- Each statement on the questionnaire had already been assigned a section and a number when the questionnaire was constructed, so all statements had different codes. For example, statement 2.1 from section E had been coded as E2.1

- A number was also assigned for respondents' responses based on the 6-point Likert questionnaire as shown below:

Strongly Agree = 6

Agree = 5

Slightly Agree = 4

Slightly Disagree = 3

Disagree = 2

Strongly Disagree = 1

- Coded data was then captured manually onto an Excel spreadsheet with rows showing the Likert scale response per respondent, while columns showed the questionnaire statement and reference number.
- Responses from the executive managers were captured on a separate spreadsheet from the employee responses since these were going to be analysed separately.

4.11 Descriptive statistics

A number of authors have described the term 'descriptive statistics'. According Leedy and Ormrod (2010:265), descriptive statistics describe the features of a specific data set by summarizing the sample data. Holcomb (2016) pointed out that descriptive statistics helps present data through graphs, tables and charts, as well as means and standard deviations.

Out of the 352 questionnaires administered in this research, 352 responses were received, of which two employee questionnaires were discarded because they were both blank as the employees were not available during data collection. The total usable responses received were therefore 350, accounting for a 99% response rate. Collected data from the research instrument was analysed by the use of percentages, which were calculated based on how the respondents responded on the Likert scale questionnaire. Graphical presentation was done using pie charts, graphs and tables. Means and standard deviations were also analysed and presented in tables.

4.11.1 Correlation

According to Sekaran (2003:303), correlation is an analysis that is done to measure the existence and degree of relationship between variables, and the strength and direction of that association. In this bivariate analysis, the value of the association between variables between +1 and -1 with a value of ± 1 indicated a strong relationship, while a value towards 0 and less indicates a weak association. The two common tests that can be used to measure correlation are Pearson's correlation and Spearman's correlation.

To find out if an association existed between PMS, strategy and organisational performance and to test the hypotheses that were formulated in Chapter 1, the researcher used Spearman's Correlation coefficient.

4.11.1.1 Chi-square goodness-of-fit-test:

In order to test relationships between the categorical variables of this study, a Chi-Square goodness-of-fit test was conducted on SPSS. Sekaran (2003:303) stated that a Chi-Square goodness-of-fit test is an inferential statistical analysis to test how likely it is that the observed distribution was due to chance or if any of the response options on the research instrument were selected significantly more / less often than others. The test assumes that, under the null hypothesis, all responses are equally selected if all the variables are independent. There was no significant result of the test, which meant that for each question on the questionnaire, all options were equally selected.

4.11.1.2 Analysis of Variance (ANOVA)

Rouder, Engelhardt, McCabe and Morey (2016:1779-1786) cited ANOVA as a test used to identify if significant differences exist between two data sets by using their means. In this study, this test was used to compare the levels of agreement between executive managers and employees on how strategy implementation and evaluation were being conducted in the sampled companies.

4.11.2 Qualitative Analysis

Qualitative data was only collected and analysed for the case company so that during the development of the SPMMS, the researcher had advance knowledge of what was happening and could also compare the data collected to the information that was being applied during the model development. Follow-up interviews were conducted so that the researcher had information about the vision, mission, strategy and objectives of KPPC. This information, together with the observations and participation in focus group meetings during the development of the BSC, was necessary for the researcher to verify if the strategy map that was constructed by KPPC was in line with the objectives, vision and strategy that had been set by the management of the company initially and according to the data that had been collected. Direct interaction of the researcher with the individuals was also necessary since, according to Saunders et al. (2009:151), the researcher would build from particulars of this developed model in the case company and generalise the model development stages, interpretations of the meaning of the data and applicability of the developed model to other manufacturing companies.

The use of different data collection methods: focus groups discussions, observations, interviews and document study at the case company during the SPMMS development intrinsic triangulation strength, meaning that the findings of the qualitative research would be trustworthy and dependable. This in turn enhances reliability (Dhingra and Dhingra 2012:51).

4.12. Reliability

Trochim and Donnelly (2006:88) defined reliability as the degree to which a survey instrument produces the same findings every time it is used, provided the variable being measured has not changed. If variables are the same and the instrument produces similar results the next time it is used, it is considered to have high reliability. Trochim and Donnelly (2006:88) cited split halves, alternate forms, internal consistency and test-retest as methods that researchers usually use to test reliability. To test

reliability in this research, the internal consistency method (Cronbach's Alpha) was used. Reliability is considered high when Cronbach's Alpha is close to 1. Cronbach's Alpha was calculated for the strategy constructs (formulation, implementation, evaluation and (re)formulation), PMSs and non-financial performance measures. An average Cronbach's Alpha of 0.98 was achieved for strategy constructs, while Cronbach's Alpha was at an average of 0.89 for both performance measurement systems and non-financial measures of customer, employee, business processes and supplier. According to Trochim and Donnelly (2006:89), these are considered as very good.

4.12.1. Validity

Teusner (2016) defined validity as the degree to which the whole research, from the establishment of the questions to the design and choice of methodology; construction of the research instrument to the analysis and presentation of data produced findings which represent what was supposed to be measured and addresses all the research objectives.

Teusner (2016) further pointed out that two major validity tests are conducted in research: content and construct validity. Content and construct validity were both adopted to test validity in this research. Content validity is when all the items in a data collection instrument or measuring test are able to satisfactorily measure the content of the property that the researcher or investigator intended to measure (De Vos and Strydom, 2005:163). After thoroughly reviewing previous literature on PMSs, strategy and organisational performance, the researcher ensured construct validity by ensuring that during the construction of the questionnaire, all the constructs of the variables being studied were covered. The questionnaire had different sections, with each addressing a specific variable and its objectives. Once the questionnaire had been constructed, a summary from the literature review on PMSs and their guidelines, strategy and its constructs and organisational performance and its performance indicators together with the constructed questionnaire were sent to a) a CEO in the manufacturing industry, who is an MBA graduate and also has vast experience on the

subject matter; b) the research supervisor (a professor with a PhD); and c) a managing director of a manufacturing company who is a Chartered Accountant with 29 years' experience in the corporate world. The researcher asked these people to check: i) that all study variables and constructs were covered by the questionnaire and also to compare the questions to the summary of the literature review provided; ii) that the questions were asked systematically; iii) that they were no duplicated questions; and iv) that they were straight forward with no confusing terms. This was done to ensure content validity.

After all the suggestions and advice, confusing terms were removed and questions that had been overlooked were added, while questions that were not necessary on the questionnaire were removed from the list. The questionnaire was then sent to the qualified statistician for approval. Data gathering only started thereafter.

4.12.2 Ethical Considerations

The Business Dictionary defines ethics as moral values and principles governing people's behaviour and attitudes. The most important rituals in ethical considerations were identified by O'Leary (2010:41-42) as: making sure that full and informed consent was obtained from research participants before commencement of the research or collection of data, ensuring participants' safety at all times, ensuring the dignity, ensuring the anonymity of both individuals and organisations participating in the study, ensuring that collected data is kept confidential and also making sure that research findings are not biased but presented accurately. According to Silverman (2013:162), obtaining informed consent from participants is the most important of the above considerations since it becomes a contract between the researcher and the respondents. This means therefore that the letter of information to the prospective participants must have all the necessary information about the research so that the decision to participate is well informed (Silverman, 2013:162).

To ensure that there was integrity in the research process, the researcher had to get formal written permissions to conduct the research from directors, executive managers or chief executive officers of the ten organisations being studied. The nature and

expected outcomes of the study were clarified to the directors and participants of the selected organisations. Meetings were conducted between the researcher and the directors and chief executive officers of the companies to clarify the sort of questions that would be asked on the questionnaire.

The letters presented by the researcher to the directors and chief executive officers of the ten companies clearly assured anonymity on the part of those who were going to participate in the research. Participation was voluntary and participants were informed about their right to refuse to participate in the research. Absolute clarity was made to both the participants and the organisations that they had the option and the right to withdraw or discontinue their participation at any time during the study if they suspected any sinister motive on the part of the researcher. The research's aims and objectives were also explained to respondents before data was collected from them. Respondents were also assured of confidentiality and anonymity. Participating companies' identities were protected with the use ofonyms. For example, KZN Printing and Packaging Company (KPPC) was used for the case study company that represented companies that do printing and packaging. Data from the research, its interpretation and presentation of the findings was done with honesty and sensitivity.

4.12.3 Elimination of Bias

Bias is defined by McBurney and White (2009:366) as any unfair tendency by the researcher to lean towards or prejudice a group of people, a person or a company in this situation. An impartial quantitative research study would ensure and respect participants' dignity, as well as consider important ethical issues. Therefore, bias in this case study was minimised by:

- thoroughly and accurately checking results before reporting on findings to avoid misinterpreting results and
- Coding and numbering of all completed questionnaires before capturing onto the computer to make sure no information was duplicated or wrongly captured,

which would produce wrong results. Captured information was checked and re-checked before being sent for statistical analysis.

4.13 Research process summarised

Saunders et al. (2007) postulated that the activities of a research process are closely linked and related. These activities do not usually follow a well-defined sequence, but rather they overlap. The steps in a research process are therefore interdependent since the next step is always determined by the previous step. In this way, the study can be documented in such a way that another individual can conduct the same study again. Following up on the advice from Saunders et al. (2007), this study also followed a process of interconnected activities as summarised in Figure 4.8 below:

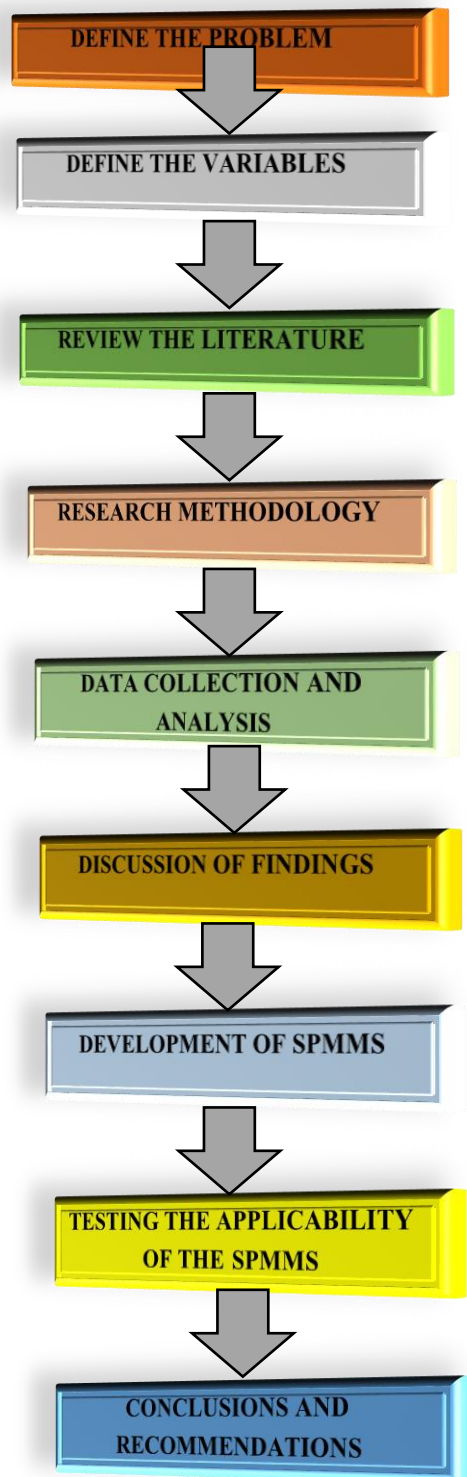


Figure 4.8: Research process:

Source: Author's own

The process started by identifying the problem in Chapter 1, the background and importance of manufacturing in developing countries were highlighted. The problem of the lack of performance measurement systems suitable for manufacturing companies was also identified. This was based on the professional experience of the researcher who has worked for and dealt with a number of suppliers in the manufacturing industry in the KZN province. Hence, the research topic was of personal interest to the researcher.

Chapter 2 marked the second stage of the process. It identified and defined the study variables and gave a brief introduction to manufacturing and performance measurement. The established study variables, performance measurement systems, strategy and organisational performance were discussed in detail in Chapter 3. It was in the review of literature that the researcher was also educated about prior studies, methodologies used, findings and conclusions of previous researchers in the area of concern. Research hypotheses were also formulated in this chapter and the research gap was further identified. Moreover, the research problem was clarified.

The research methodology chapter served as the plan, strategy and guide for the whole research, identifying and defining the participants of the study, the data collection methods as well as where the data would be collected and when. The population for the research was first identified and then narrowed into a target population so that the scope of the study would also be reduced to a manageable one. Research strategies for both the stages of the research were also selected and discussed.

The data collection stage was a critical and vital step in the research since it provided the information the researcher needed in order to answer the research questions. The data collection process for the quantitative stage followed the following stages:

- Two structured questionnaires were hand delivered by the researcher to the ten companies in order to collect data from one executive manager and employees from all departments in each company.

- The researcher would read each question to the respondent and tick in the appropriate box based on the response given
- All completed questionnaires were checked for errors, edited and filed in individual files for each company
- Data was then coded and captured onto an excel spreadsheet before it was statistically analysed by use of SPSS.

Data for the qualitative stage was collected from the case company as follows:

- A face-to-face interview was first conducted with the CEO to get information on the mission, vision and strategy of the company so that this would be referred to during the design and development of the SPMMS
- Semi-structured face-to-face interviews were also conducted with the executive managers of the case company to gather information on the strategies they had formulated and how they intended to implement and evaluate them. This information was going to be needed during the SPMMS development stage.
- Participant observation was employed during executive management's sessions and sub-group meetings and workshops conducted by the SPMMS implementation team which had been chosen by the company.
- Collected data was then edited, coded and analysed by descriptive statistics.

Findings from literature review and primary data collected were discussed in Chapter 5. There was a discussion on the association between SPMSs, strategy and organisational performance. The collected data was presented using graphs, tables and charts. The results and findings were then linked to the hypotheses being tested and the literature review.

A SPMMS for manufacturing companies in the form of a BSC was developed in Chapter 6. This was done using the findings from the literature review, findings of the study and from the qualitative data collected from the case company.

In Chapter 7, the applicability of the developed SPMMS was tested, while Chapter 8 made recommendations and concluded the study.

Since the aim of this research was twofold, the research process consisted of three stages as follows:

- Firstly, the researcher employed quantitative methods to collect data from ten companies in the KwaZulu-Natal manufacturing sector to realise the research aim of examining the existing PMSs in those companies and to understand the impact of current performance measurement systems on strategy and organisational performance. A structured questionnaire was used for this purpose.
- Secondly, based on the results of the previous stage and the findings from the literature review, performance perspectives and the specific measures that were to be adopted into the new model and in the context of manufacturing sector companies emerged, based on the shortcomings of the existing performance measurement systems which were currently being used in the ten companies selected.
- The final stage used a case study approach by selecting one company from the sample to develop a BSC and test the applicability of the developed model.

The following chapter details the results of the research; the researcher also interprets and discusses the research's findings.

CHAPTER 5

DISCUSSION AND INTERPRETATION OF RESULTS

5.1. Introduction

In this chapter, data collected from the questionnaire is analysed to identify, describe and explore the associations between PMSs, strategy and organisational performance. The collected data, findings and results are presented in a more meaningful way using graphs, tables and charts. The results and findings are then discussed and linked to the hypotheses being tested and the literature review. The researcher restricted the contents of this chapter to data analysis, interpretation and presentation by way of graphs and tables. The chapter is split into four sections: the first section presents a brief overview of the sampled organisations; second section discusses results on strategy (formulation, implementation, evaluation and re-formulation); the third section analyses PMSs, whilst the last section provides an overview of the respondents' organisational performance. The chapter then ends with a short summary.

5.2. Response Rate

Executives, senior, middle, junior managers and lower level employees from each department of the ten organisations (n = 352) were the targeted population. The respondents were given questionnaires to complete and 352 responses were received. However, 2 were excluded from the study because both questionnaires had not been completed, meaning that 350 responses were usable. This amounted to a response rate of 99%.

5.3. A brief profile of the sampled organisations

In this section, the researcher provides a profile of the relevant industries and demographics of the companies. As stated in Chapter 4, the identities of the companies were protected. Therefore, anonyms were given based on the industry of the respondents, for example, KZN Printing and Packaging Company (KPPC) stands for the case study company that represented companies that do printing and packaging.

The research sample had ten companies and Table 5.3.1 below shows the names and industries the companies belonged to.

Table 5.3.1: List of respondent companies and their relevant industries, 2019

Organisation's name	Industry
KPPC	Printing and packaging
KDM	Die manufacturers
KPDMC	Pharmaceutical drug manufacturers
KPGS	Paper and graphic suppliers
KPMC	Paper and board manufacturers
KLCC	Laminates, chemicals and associated products
KIGM	Inks and UV varnish manufacturers
KRP	Repro and packaging
KCBM	Corrugated boxes
KIEEM	Industrial electronic equipment

Table 5.3.2: Number of employees of respondent enterprises, 2019

Category	Number of companies	Percentages
51 - 200	5	50%
201 - 400	4	40%
401 - 600	1	10%
Total sample	10	100%

The numbers of employees of the respondent companies were grouped into three categories as shown in Table 5.3.2 above. Five of the respondent companies have between 51 – 200 employees, while four had between 201 – 400 and one company had 401 – 600 employees.

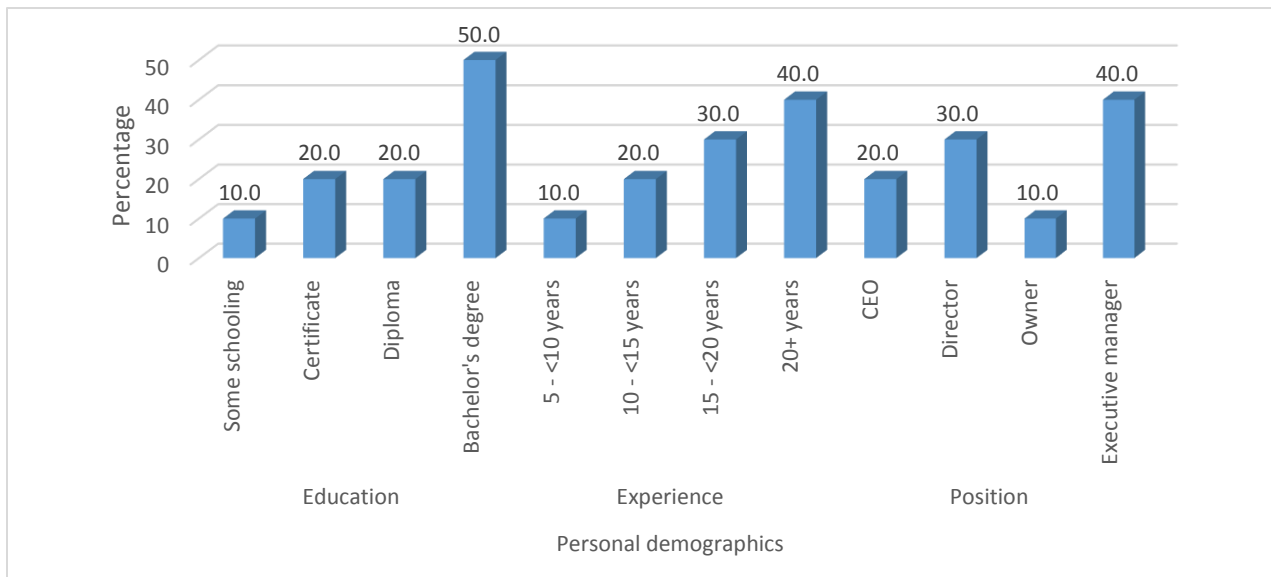


Figure 5.3.1: Personal demographics (Executive managers)

Figure 5.3.1 above shows the education, experience and the positions of the respondents who completed the executive manager questionnaire, as well as the percentage representation. The majority of the executive managers (50%) had bachelors' degrees, while the rest had a diploma or certificate. Only one executive manager had matric. Forty percent of the executive had been with their companies for

more than 20 years, 30% were between 15 – 20 years, while 20% were over 10 years and over 5 years respectively.

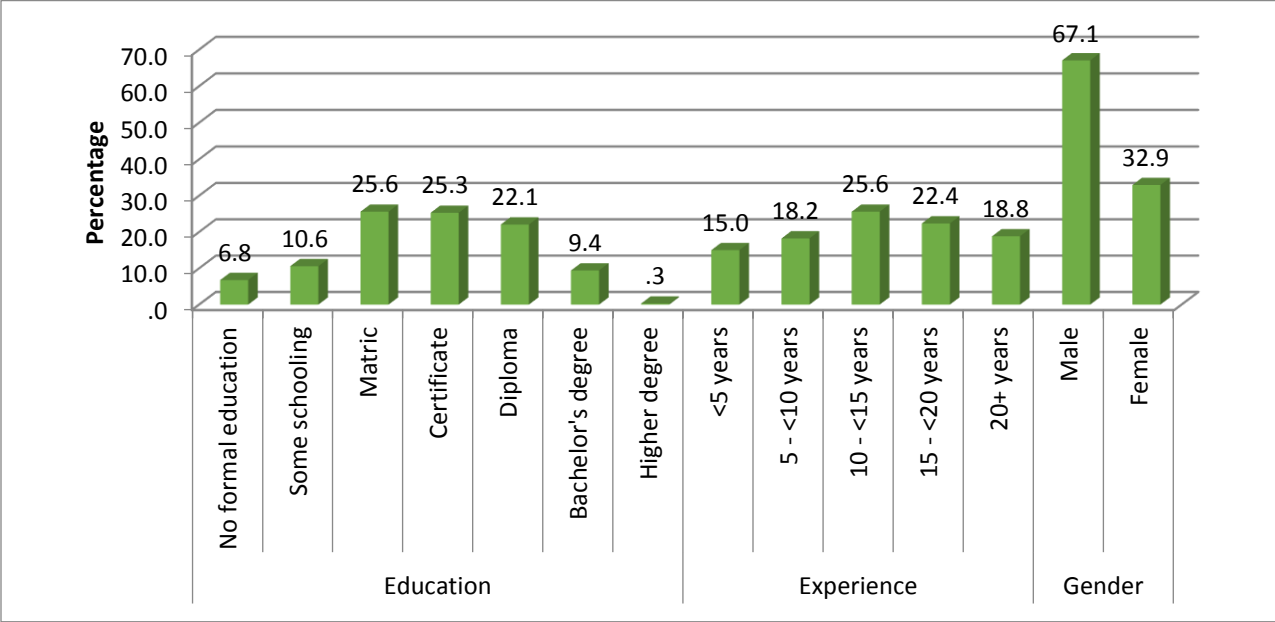


Figure 5.3.2: Personal Demographics (Employees)

To establish the levels of education of the employees in the respondent companies, the data from the employee questionnaire was analysed separately and is presented in Figure 5.3.2 above. Only one out of 340 respondents (0.3%) had a higher qualification; 32 employees (9.4%); had bachelor’s degrees; 22% had certificates; while 59 employees did not have formal qualifications at all. Results from the employee questionnaire also revealed that the manufacturing sector is dominated by male employees. The gender ratios presented in Figure 5.3.2 show that 228 out of the total employee respondents were male (67%), with the remainder (33%) being female. Fifteen percent of the employees had been with their companies for less than 5 years; 18% were 5 – 9 years; 26% were between 10 – 14 years; 22% between 15 – 19 years, while the rest, (19%) had more than 20 years’ experience in the same companies.

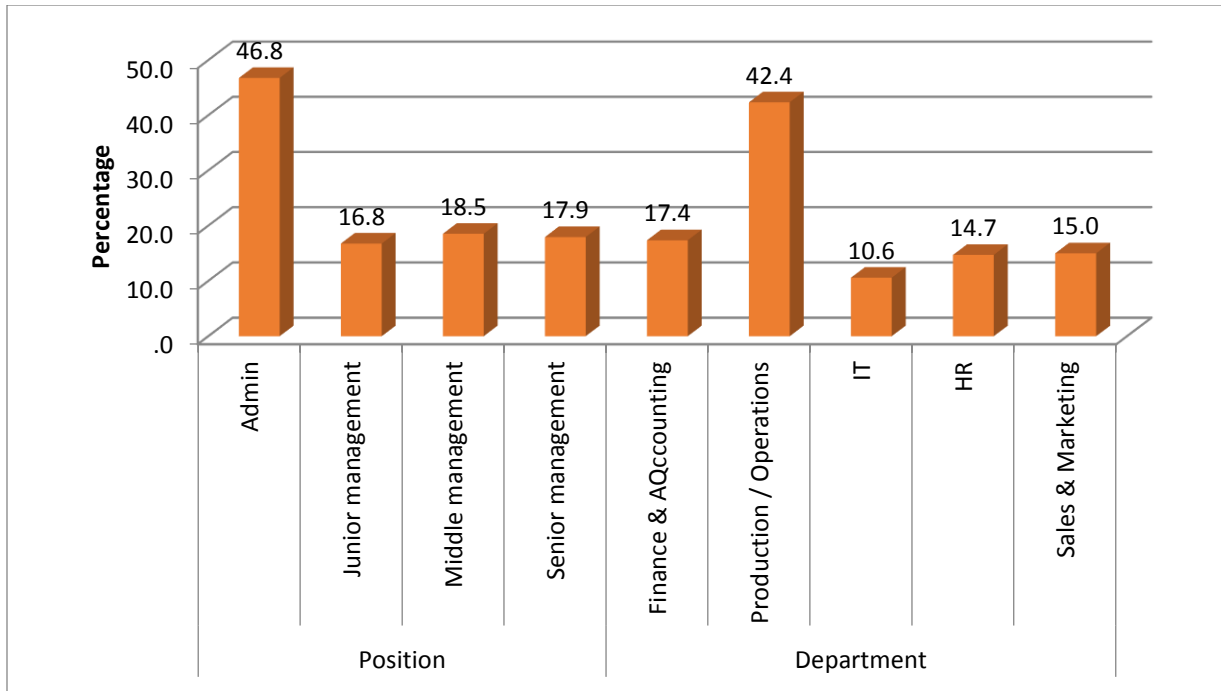


Figure 5.3.3: Employee positions and departments

As can be seen from Figure 5.3.3 above, questionnaires were administered to employees at every level of the individual enterprises from senior management to lower level administration staff, which means that all employees were fairly represented. The major departments in all the companies were the same, except for one company that had two more departments that had just been created, namely quality assurance and quality control departments. However, these two departments usually fall under production and operations in most companies. Although the two departments were reported under production and operations, the researcher made sure that all employees in those departments were also equally and fairly represented. Results revealed that 17.4% were in Finance and Accounting; 42.4% were from Production and Operations; 10.6% from Information Technology (IT); 14.7% from Human Resources (HR), while Sales and Marketing was represented by 15% of respondents across the sample.

As stated in Chapter 1, one of the study objectives was:

- To investigate the types of PMSs being used by manufacturing companies in KZN and establish the extent to which these PMSs could be classified as SPMMSSs.

To achieve the above, (ie a balanced and integrated SPMS), the Balanced Scorecard, was used as a reference model and an appropriate performance measurement model for the manufacturing industry.

Using guidelines of integrated SPMSs which were identified in chapter 3 (BSC), a questionnaire was formulated to identify:

- The types of PMSs being used in KZN manufacturing companies;
- the degree to which the selected manufacturing companies use financial as well as non-financial performance measures based on the perspectives of the BSC; and
- the relationship between a company's strategy and overall organizational effectiveness through the use of SPMSs.

The results of the study findings on the variables: strategy, performance measurement systems and organisational performance, will now be presented below.

5.4 Strategy

It was discussed in Chapter 3 section 6 that strategy is developed in four distinct processes: formulation, implementation, evaluation and re-formulation.

➤ Formulation

Section C of the executive management questionnaire asked respondents to answer questions on how their organisations performed strategy formulation and to state their degree of agreement or disagreement with each statement on the questionnaires. Respondents were asked to show their level of agreement or disagreement by choosing an answer from a 6 point Likert scale where 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree and 6 = strongly agree

The main constructs of strategy formulation as discussed in chapter 3, section 3.6.2 are: a) setting explicit goals and objectives which connect individual employee and departmental goals with the organisation's goals, b) setting explicit metrics, c) setting explicit targets, d) linking performance measures to long-term strategy, e) linking to company vision and mission and f) involvement of all managers in design and selection of performance measurements. Results of findings on these constructs are presented below.

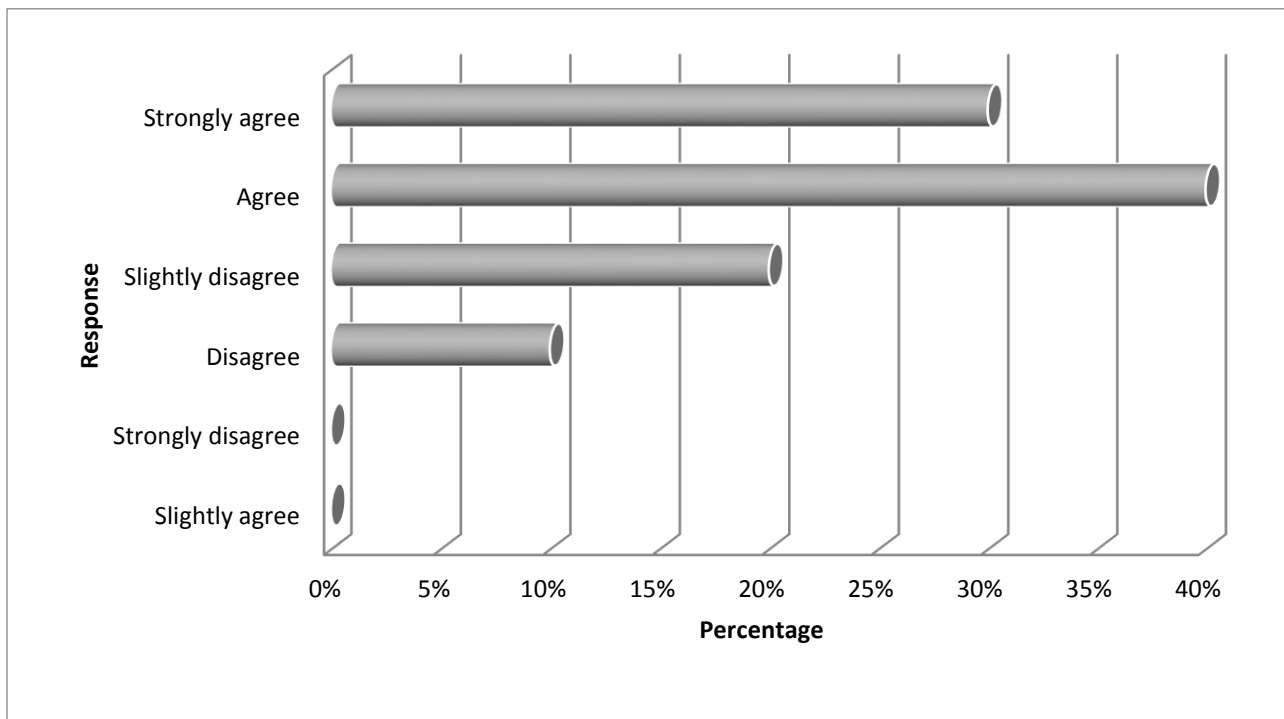


Figure 5.4.1: Explicit goals are set

While 30% of the respondents stated that their firms' PMSs did not explicitly contain goals and objectives, 70% were positive that their PMSs contained goals and objectives. As discussed in section 3.6.2, setting clear goals and objectives gives employees direction as they are aware of exactly what is expected from them (Thompson et al., 2007:20). Goals also help organisations to plan and allocate resources.

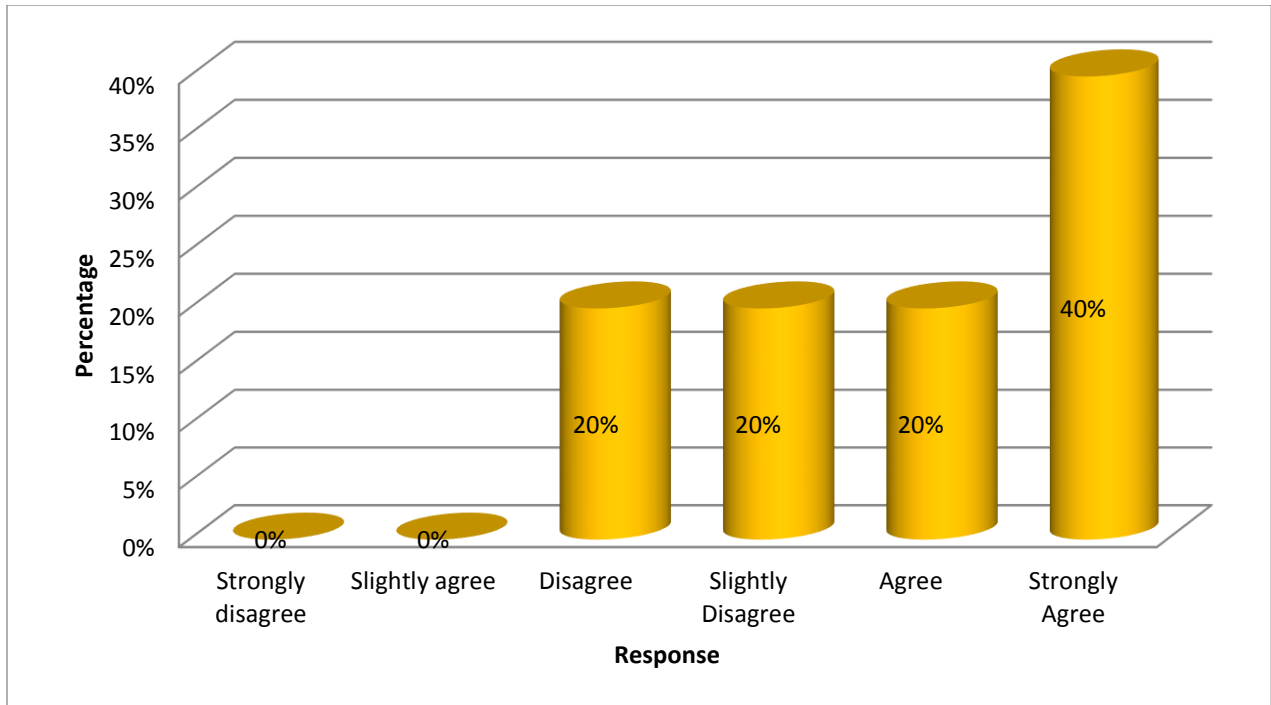


Figure 5.4.2: Objectives are set for each employee to fulfill a specific role in the company

Striteska (2012:1103-1110) cited in her research that having clearly defined goals or objectives helps managers keep employees motivated and on track and can actually be more motivating than financial incentives. Striteska (2012:1103-1110) further stated that when goals are clear and are communicated, everyone works as a unified team to fulfill a shared purpose and vision. Striteska's arguments were also supported by Micheli and Manzoni (2010:465-476) as stated in section 3.2.1 of chapter 3 when the authors identified one of the roles of PMSs as that of being interactive since it assists organisations in communicating their strategies, which in turn brings the organisation to work together as a team. A total of 40% of the respondent companies (20% disagree and 20% slightly disagree) as shown in Figure 5.4.2 above do not set individual objectives for their employees. However, 20% of the respondents agreed while 40% strongly agreed that each of their employees knew their objectives and specific roles they need to fulfill within their companies.

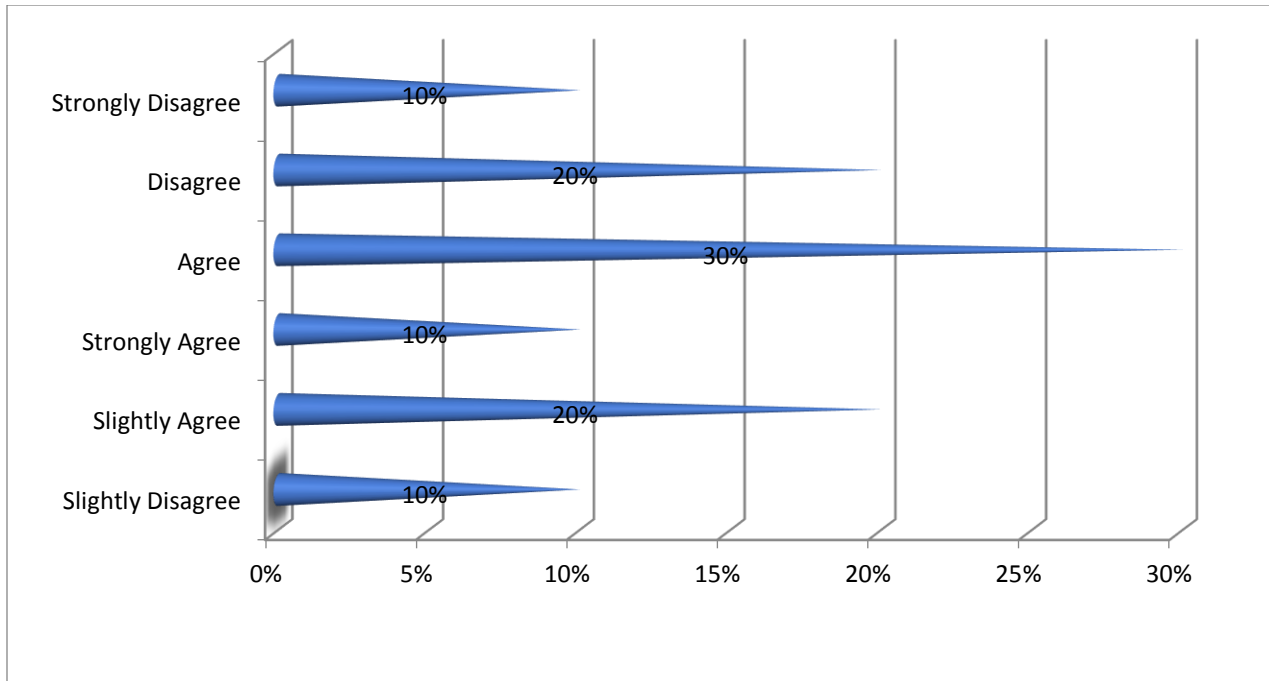


Figure 5.4.3: Metrics are set to evaluate the performance of individual employees and departments

Verweire and Van den Berghe (2004:37) stated in literature review that appropriate performance metrics are critical to a performance measurement system because executives use them to communicate individual and departmental roles in the while functional managers use them to identify employees not performing well and to train or guide them to perform better. Another important role of explicit metrics, as argued by Thompson et al. (2007:20) in section 3.6.2 is to help managers identify, motivate, train and re-direct underperforming employees or departments. However, according to Verweire and Van den Berghe (2004:37), quite a large number of companies struggle to set explicit metrics in their PMSs. This is evidenced by the number of respondents who disagreed when asked if their PMSs contained explicit metrics. Only 10% strongly agreed with this statement, 30% agreed and 20% seemed to set metrics for some departments but not all departments in the companies, as they only slightly agreed with setting explicit metrics as shown by the 20% in Figure 5.4.3 above. Thirty percent of the respondents disagreed completely, while 10% also slightly disagreed.

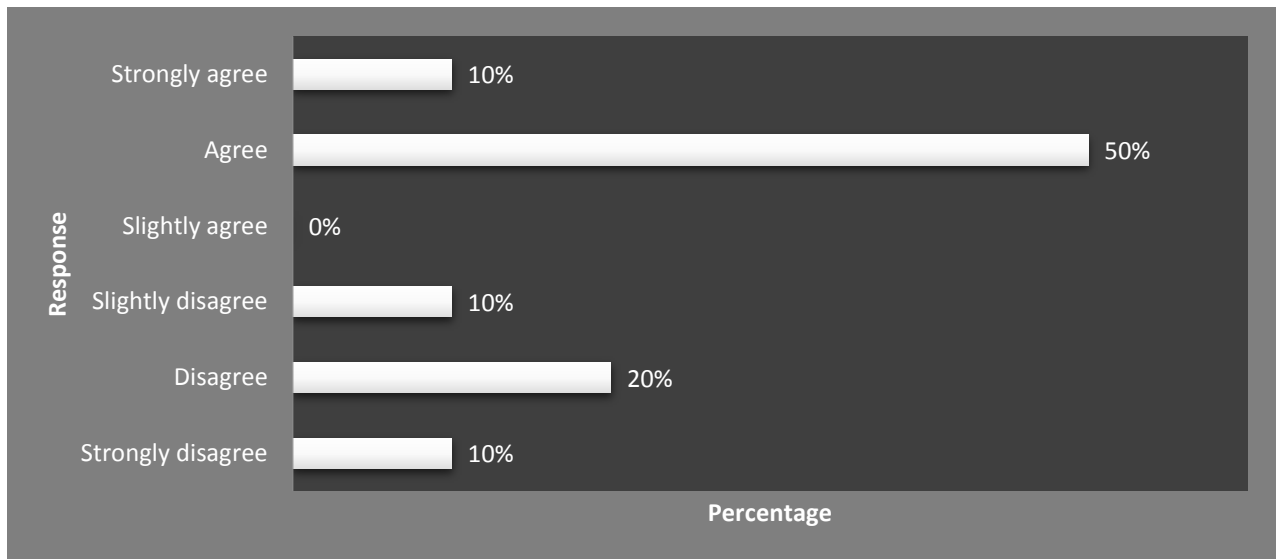


Figure 5.4.4: Performance measures are linked to long-term strategy

In this study, the importance of linking performance measures to long-term strategy was evidenced by the 50% of respondents who agreed and the 10% who strongly agreed that their performance measures in the PMSs were linked to the companies' long-term strategies, with only 10% of the target population strongly disagreeing with the statement. Twenty percent disagreed and 10% were not in total disagreement, since they slightly agreed with the statement.

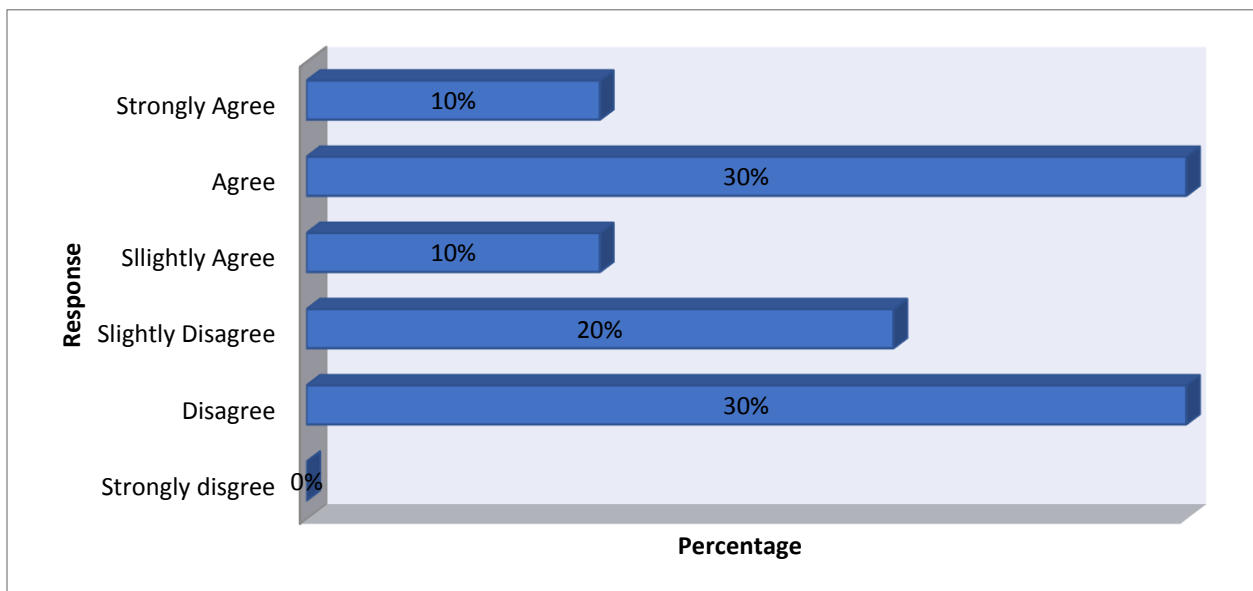


Figure 5.4.5: Performance measures are linked to organisation's mission and vision

Ferreira, Shamsuzzoha, Toscano and Cunha (2012:672-690) posited that once an organisation's performance measures have been agreed upon, they need to be linked to the vision and mission of the organisation. Although in section 3.6.1, in chapter 3, Oyedijo (2013) agreed with Ferreira et al. (2012: 672-690) that besides being linked to vision, strategy is driven by a company's desire to achieve organisational effectiveness, the results in 5.4.5 above do not show total agreement as there was an equal split between respondents who agreed with the importance of linking measures to company missions and visions and those who disagreed with the statement. The respondents who agreed were split as: Strongly agree (10%), agree (30%) and slightly agree (10%); while the disagreeing respondents had 20% slightly disagreeing and 30% completely disagreeing.

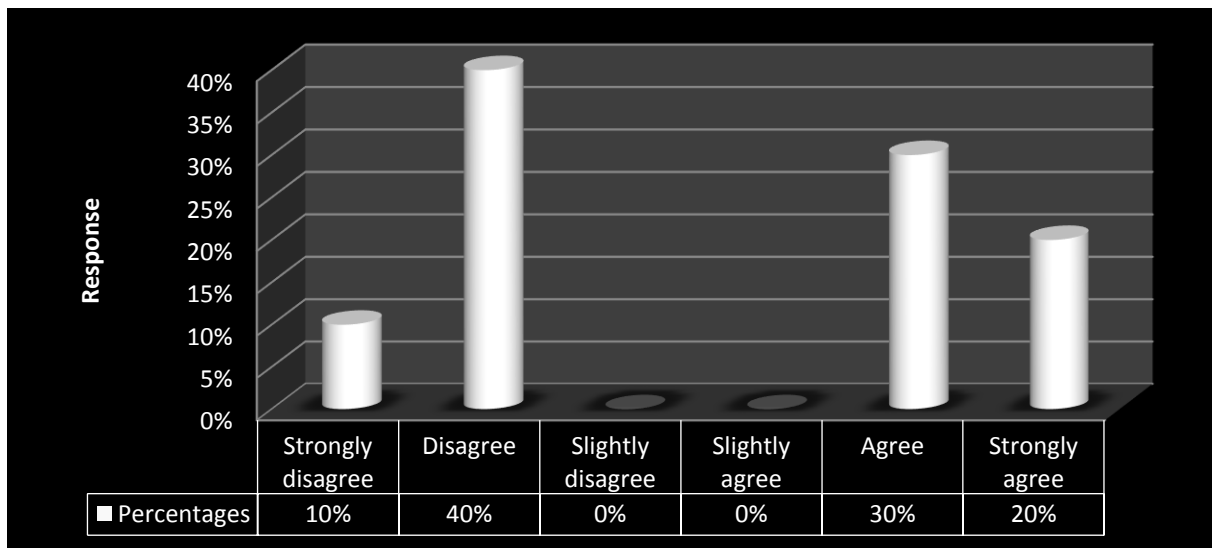


Figure 5.4.6: All managers are involved in the design and selection of performance measurements

It was discussed in Chapter 3 and cited by Verweire and Van den Berghe (2004:11) that managers from different functional areas play a particularly important role because they have the greatest impact on the motivation and performance of employees, hence they need to be involved in all processes of performance measurement, including the design of the PMS and the selection of relevant and important measures. The respondent companies were again equally divided between those agreeing with this statement (50%) with those who disagreed, also 50%. A one sample t-test was also conducted to test if the average scores of all the measures are significantly different

from a central score of 3.5 (half-way between 1 and 6). These are presented in Figure 5.4.7 below.

Results from Figure 5.4.7 below show that there is significant agreement that explicit goals and objectives are set in the sampled manufacturing companies, M=4.6.



Figure 5.4.7: One sample t-test (strategy formulation)

➤ **Implementation**

The importance of the implementation of the formulated strategy was highlighted by David (2003:236) as discussed in Chapter 3. Section C2 of the manager’s questionnaire sought to identify the manner in which the sampled firms are implementing their formulated strategies through their human resources.

The most important stages of strategy implementation as quoted by Thompson et al. (2007:21) and as per guidelines of SPMMSs as discussed previously are:

- “Communicating the vision and mission of the organisation to all employees;
- Communicating company strategy to all employees;
- Explaining the impact of both individuals’ and departments’ performance overall organisational performance to every employee;
- Communication of company goals and objectives to all employees; and
- Making each employee aware of the incentives for the fulfillment of objectives”.

The results from this section are summarised by Figure 5.4.8 below.

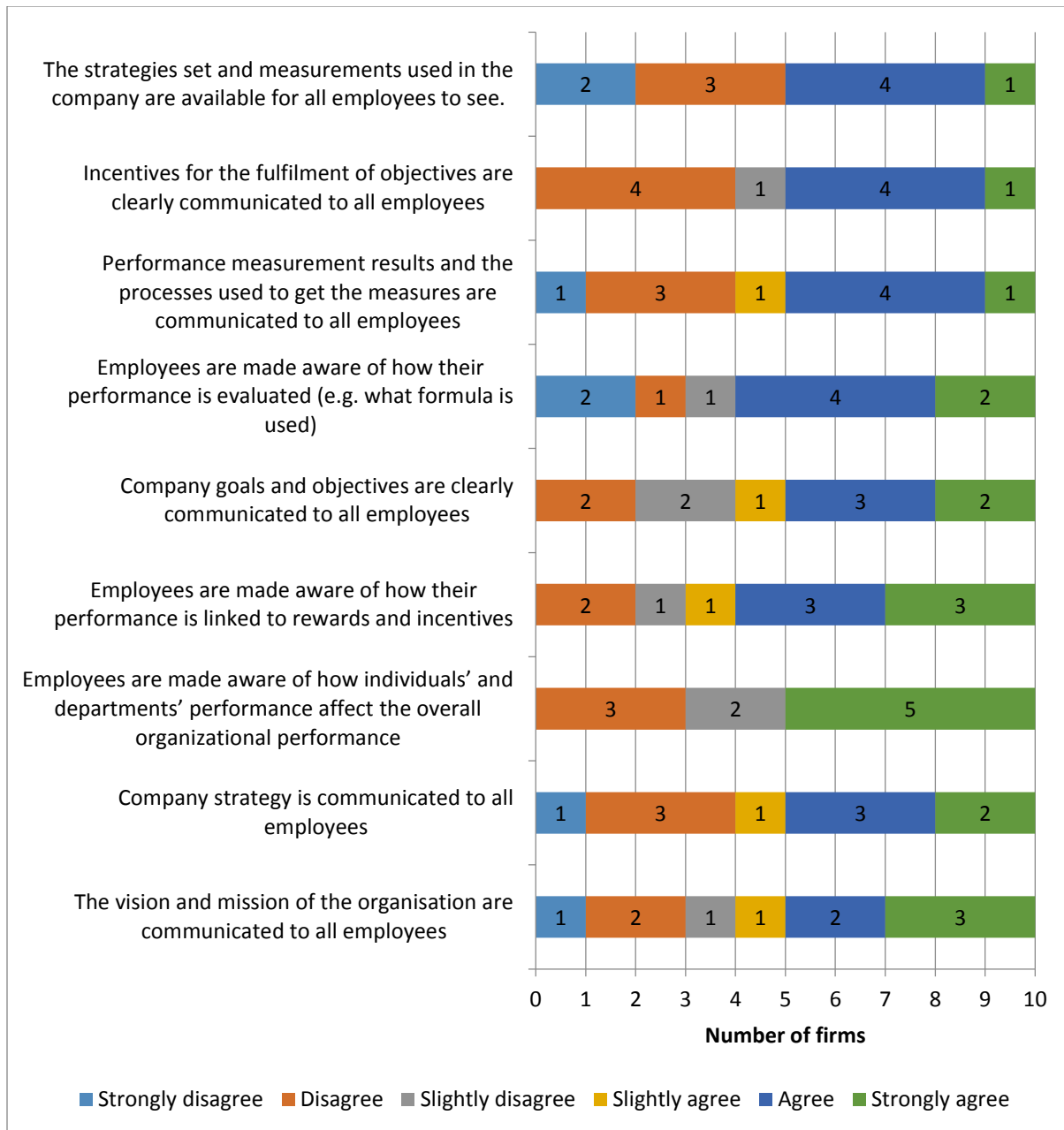


Figure 5.4.8: Strategy implementation

Although the importance of communicating the vision and mission of the company to employees is beneficial to the entire organisation and its overall performance, as highlighted by Möller et al. (2011) in section 3.6.1 of the literature review, Figure 5.4.8 above reveals that 4 out of the ten companies were not communicating their visions and missions, while 4 companies also do not communicate strategy to all employees. If

employees are aware of how they as individuals and as departments affect the organisation's overall performance, it is likely to make them motivated to achieve both individual and departmental goals. Two of the respondent companies strongly agreed with this statement. Gosselin (2005:419-437) suggests that performance measures, goals and objectives should be clearly communicated from top to bottom as a means of implementing and articulating strategy. This should be done so that each employee knows exactly what the company wishes to achieve and what they as employees are expected to contribute to improve performance. From 5.4.8 above, 6 out of the 10 companies agreed that company goals are being communicated.

Research by Kolehmainen (2010:527-554) concluded that organisations that reward employees for good performance can benefit in that a motivated workforce is significantly more productive, is more efficient, proactive and innovative since efforts are always praised, appreciated and rewarded. Moreover, such an employee would want to work harder in order to receive such rewards and recognition.

In addition, according to Kolehmainen (2010:527-554), if efforts are recognised, employees feel that their job is valuable and important to the organisation, thereby resulting in job satisfaction. In this study, however, only half (50%) of the respondents agreed that incentives for fulfillment of objectives are set and communicated to all employees. Another 50% of the respondents disagreed, which according to Kolehmainen (2010:527-554) may result in a less motivated and inefficient workforce.

➤ **Evaluation**

As highlighted by Coulter et al. (2006: 6-8), strategic evaluation reveals the efficiency and effectiveness of the implementation of strategy to achieve the desired results as stated during strategy formulation. The process of evaluation looks at: measurement of performance, analysis of variances, reporting of results, taking corrective action and giving feedback. Elements of strategy evaluation are listed below and presented in the following tables and figures.

- Existence of ongoing monitoring of organisational performance;

- Employees are regularly evaluated on their performance;
- Regular feedback is given to employees regarding their performance;
- Regular feedback is given to employees regarding the performance of their department; and
- Regular feedback is given to employees regarding the performance of the organisation as a whole.

Table 5.4.1: There is ongoing monitoring of organisational performance

Response	Frequency	Percent
Strongly disagree	0	0
Disagree	1	10
Slightly disagree	0	0
Slightly agree	3	30
Agree	2	20
Strongly agree	4	40
Total	10	100

In Chapter 3, Bisbe and Malague'no (2012:299) asserted that PMSs are designed to direct and guide managers to strategically and continuously monitor an organisation's performance outcomes. From the results of the questionnaires, 60% of the respondents also seemed to agree with these authors, while only 10% were in disagreement.

Table 5.4.2: Employees are regularly evaluated on their performance

Response	Frequency	Percent
Strongly disagree	0	0
Disagree	1	10
Slightly disagree	3	30
Slightly agree	1	10
Agree	2	20
Strongly agree	3	30
Total	10	100

When they highlighted the roles of PMSs in section 3.2.1, Franco-Santos et al. (2007) pointed out that one of the most important roles is that of being diagnostic. Regular evaluation of employees, according to the authors, would assist managers in keeping their teams on track; recognise and reward good performers, while also identifying those who need training and motivation. Only 4 out of the 10 companies disagreed with this statement; 3 strongly agreed, while 2 and 1 out of the 10 agreed and slightly agreed respectively.

Table 5.4.3: Regular feedback is given to employees regarding their performance

Response	Frequency	Percent
Strongly disagree	0	0
Disagree	1	10
Slightly disagree	3	30
Slightly agree	1	10
Agree	3	30
Strongly agree	2	20
Total	10	100

Pekkola (2013) stated in his research that most managers underrate feedback yet it is a cheaper and powerful way of motivating employees. Feedback is viewed by employees

as a guide and as a way for them to stay on track. A majority of respondents, (60%), agreed with Pekkola.

Table 5.4.4: Regular feedback is given to employees regarding the performance of the organisation as a whole

Response	Frequency	Percent
Strongly disagree	2	20
Disagree	1	10
Slightly disagree	2	20
Slightly agree	0	0
Agree	4	40
Strongly agree	1	10
Total	10	100

From Table 5.4.4 above, 50% of the respondents stated that they were giving their employees feedback on organisational performance. This, according to Pekkola (2013), will improve individual and thereby overall organisational performance.

As further cited by Pekkola (2013), feedback is highly motivating and energising because it is linked to employee satisfaction. However, 20% of the companies strongly disagree that this is done in their companies.

Table 5.4.5: Employees receive training when needed for continuous development

Response	Frequency	Percent
Strongly disagree	1	10
Disagree	2	20
Slightly disagree	1	10
Slightly agree	0	0
Agree	3	30
Strongly agree	3	30
Total	10	100

One of the important quadrants of a SPMS according to Striteska (2012:1103-1110) is the learning and growth perspective, which includes employee training and development, leadership, motivation, staff turnover rate, organisational growth and improvement. In this study, however, a total of 4 companies do not offer training for employee development. This, as stated by Gimbert et al. (2010:477-497) in section 3.7.1 of the literature review chapter causes inefficiencies in productivity which in turn increases production costs and negatively impacts on customer satisfaction.

Table 5.4.6: Employees receive rewards and incentives based on their performance

Response	Frequency	Percent
Strongly disagree	1	10
Disagree	3	30
Slightly disagree	0	0
Slightly agree	0	0
Agree	1	10
Strongly agree	5	50
Total	10	100

Research by Micheli and Manzoni (465-476) has shown that through the appropriate measurement and management of performance, organisations that reward employees for good performance can improve their overall effectiveness through a motivated and productive workforce.

In this study however, only half (50%) of the selected companies agreed that they reward employees based on performance, while the other half disagreed. This, according to Kolehmainen (2010:527-554), may result in a less motivated and inefficient workforce.

➤ **Re-formulation**

Striteska (2012:1103-1110) described strategic management as an ongoing process. After evaluation, a company may realise the need to pursue, revise or even re-formulate other strategies, thereby going back and starting afresh from the drawing board.

Furthermore, because of the dynamic global environment that companies are surviving, a formulated strategy might not end up being realised because of economic, political technological or social changes.

When the respondent companies were asked about their strategy re-formulations, the following results were obtained:

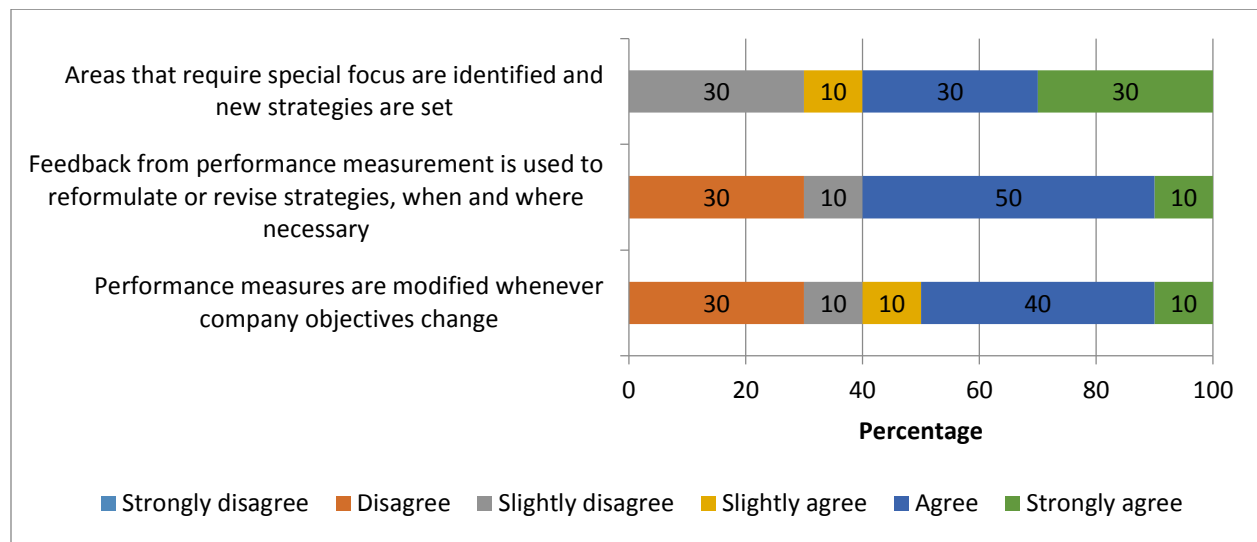


Figure 5.4.9: Strategy re-formulation

Micheli and Manzoni (2010:465-476) cited one of the important aspects of a SPMS as being able to provide fast feedback, which in turn enables an earlier re-formulation of strategies. A total of 40% of the respondents do not use feedback from their performance measurement to revise or re-formulate strategies. The majority, (60%), use the feedback to revise strategies when necessary.

As shown on the executive manager questionnaire and as stated in the literature review, multiple dimensions are used to measure each of the constructs of strategy. For each of the constructs, there were multiple questions measuring the construct. For ease of analysis, these multiple items in each construct had to be reduced to a single measure for each construct.

To achieve this, the agreement scores from each dimension were averaged across all 13 items of formulation, 9 items of implementation, 6 items of evaluation and 4 items of

(re)formulation to form a single measure for each construct. Cronbach's alpha was used to test their reliability. An alpha value of $> .7$ indicates that the single measure is reliable. The alpha for formulation was .982; implementation = .984; evaluation alpha = .977; while the (re)formulation alpha = .960. These values were all greater than .7 and were therefore reliable. The new names for these single values were STRATFORM for formulation, STRATIMP for implementation, STRATEVAL for evaluation and STRATREFORM for reformulation. These results are summarised in Table 5.9 below.

Table 5.4.7: Cronbach's alpha for strategy constructs: executive managers

Strategy construct	Name	Items included	Cronbach's alpha
Strategy formulation	STRATFORM	C1.1 – C1.13	.982
Strategy implementation	STRATIMP	C2.1 – C2.9	.984
Strategy evaluation	STRATEVAL	C3.1 – C3.6	.977
Strategy reformulation	STRATREFORM	C4.1 – C4.4	.960

A one-sample t-test was then applied to test if there was significant agreement or disagreement that these 4 strategy constructs are indeed in use in the 10 sampled firms, on average. The results of the one sample t-test are presented in Table 5.4.8 below.

Table 5.4.8: One sample t-test: Strategy constructs

Strategy construct	N	Mean	Standard deviation	Test value = 3.5		
				t	df	p-value
STRATFORM	10	3.94	1.440	.963	9	.361
STRATIMP	10	3.91	1.694	.768	9	.462
STRATEVAL	10	4.10	1.489	1.274	9	.235
STRATREFORM	10	4.13	1.420	1.392	9	.198

* denotes significance at the .05 level

Results of the one sample t-test above revealed that there was neither significant agreement nor disagreement to the use of the strategy constructs. For this manufacturing sample, strategy re-formulation (STRATREFORM) is conducted more than the other constructs, followed by evaluation (STRATEVAL).

5.5 Strategy: from the employees' perspectives

It has already been stated that two different questionnaires were administered in this study. One questionnaire was administered to executive managers, while another was administered to employees of the sampled organisations, across positions and across all departments. This was done to test if the employees concurred with their CEOs and executive managers on the implementation and evaluation of strategy since these are the two constructs of strategy that employees should also be involved in. Employees were asked to rate, on a scale, their level of agreement or disagreement with strategy implementation and evaluation practices in their organisations. The agreement scale used was a 6-point Likert scale where 1 = strongly disagree, 2= disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree and 6 = strongly agree.

As seen above in Table 5.9B the average agreement of the executive managers that strategy was being implemented and evaluated was $M=3.91$ for STRATIMP and $M = 4.10$ for STRATEVAL.

In order that data from the employee and executive manager questionnaires on strategy implementation and evaluation could be compared, factor analysis with Promax rotation was first applied to the 15 items on the employee questionnaire that have a direct correlation with the items in the implementation and evaluation sections of the executive manager questionnaire. Results from the KMO and Bartlett's Test (details of which can be found in Appendix H) revealed a KMO of .936, indicating that the data was sufficient for reliable extraction. A significant Bartlett's test ($p < .05$) indicated that associations between items were not too low for a successful result.

After factor analysis, single measures were formed for the two factors, strategy implementation and strategy evaluation, by averaging scores for the items in each of the factors. The single measure factors were then tested for reliability by using Cronbach's alpha where factor 1, strategy implementation measures, were given a single name (STRATIMP) and had an alpha = .958, while factor 2, strategy evaluation measures, were given a single name (STRATEVAL), with alpha = .907. As already stated, a Cronbach's alpha of $>.7$ is considered as reliable.

The factor analysis and Cronbach's alpha results are presented below.

Table 5.5.1: Factor analysis – strategy implementation and evaluation (employees)

	Factor	
	1	2
2 Company strategy has been communicated to me	.945	
1 The vision and mission of the organisation have been communicated to me	.895	
4 I have been made aware of how my performance is linked to rewards and incentives	.820	
5 Company goals and objectives have been clearly communicated to me	.772	
6 I know how my performance is evaluated (e.g. what formula is used)	.739	
3 I have been made aware of how my performance and that of my department affect the overall organizational performance	.697	
10 Incentives for the fulfilment of objectives have been clearly communicated to me	.685	
9 Results from performance measurement are presented graphically	.684	
20 Incentives for the fulfilment of objectives have been clearly defined for me personally	.618	
8 Performance measurement results and the processes used to get the measures have been communicated to me	.615	
11 The strategies set and measurements used in the company are available for me to see.	.584	
15 Regular feedback is given to me regarding the performance of my department		.967
16 Regular feedback is given to me regarding the performance of the company as a whole		.801
14 Regular feedback is given to me regarding my performance		.722
13 I am regularly evaluated on my performance		.579

Table 5.5.2: Cronbach’s alpha for strategy constructs: employees

Factor	Name	Items included	Cronbach’s alpha
F1 - Strategy implementation	STRATIMP	1-6, 8-11, 20	.958
F2 - Strategy evaluation	STRATEVAL	13-16	.907

To test if the average agreement from the employees was significantly different from the average agreement of the executive managers that strategy implementation

(STRATIMP) and strategy evaluation (STRATEVAL) were being used, based on the employees' perspectives, a one sample t-test was applied. Results of these are presented below.

Table 5.5.3: One sample t-test: strategy implementation (employee perspective)

Strategy construct	N	Mean	Standard deviation	Test value = 3.91			
				t	df	P-value	
STRATIMP	340	3.40	1.237	-7.577	339	.005	

* denotes significance at a .05 level

Table 5.5.4: One sample t-test: strategy evaluation (employee perspective)

Strategy construct	N	Mean	Standard deviation	Test value = 4.10			
				t	df	Sig. (2-tailed)	
STRATEVAL	340	3.88	1.246	-3.233	339	.001	

* denotes significance at a .05 level

From Table 5.5.3 above, results from the employees perspective on strategy implementation (M=3.40) significantly differ from the average agreement score found with the executive managers' data (M=3.91). It seems that the executive managers indicate a higher level of agreement that these measures are in place compared to what the employees are reporting is actually happening on the ground.

Table 5.5.4 also reveals a significant difference between employees' perspective on evaluation (M = 3.88) and the executive managers' score (M=4.10).

The differences in scores between employees and managers scores on both implementation and evaluation practices in the sampled firms are summarised per each firm in Figures 5.5.1 and 5.5.2 below for strategy implementation and evaluation.

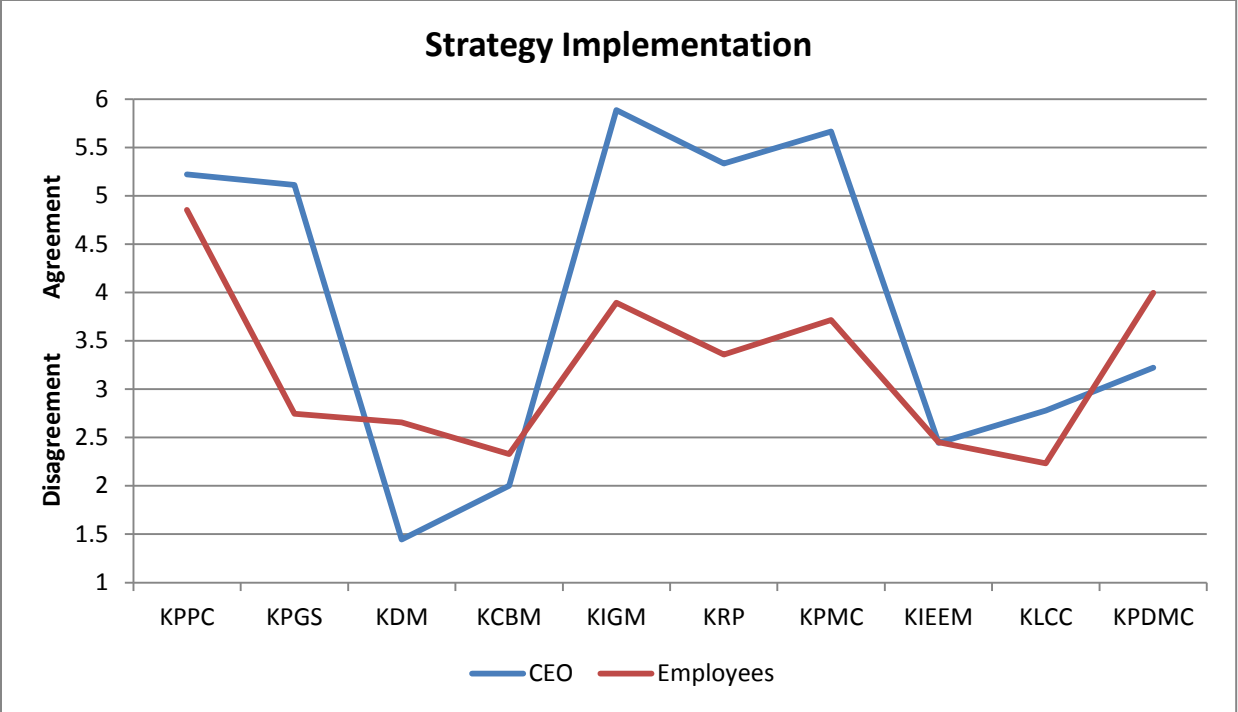


Figure 5.5.1: Strategy implementation scores: employees vs. executive managers

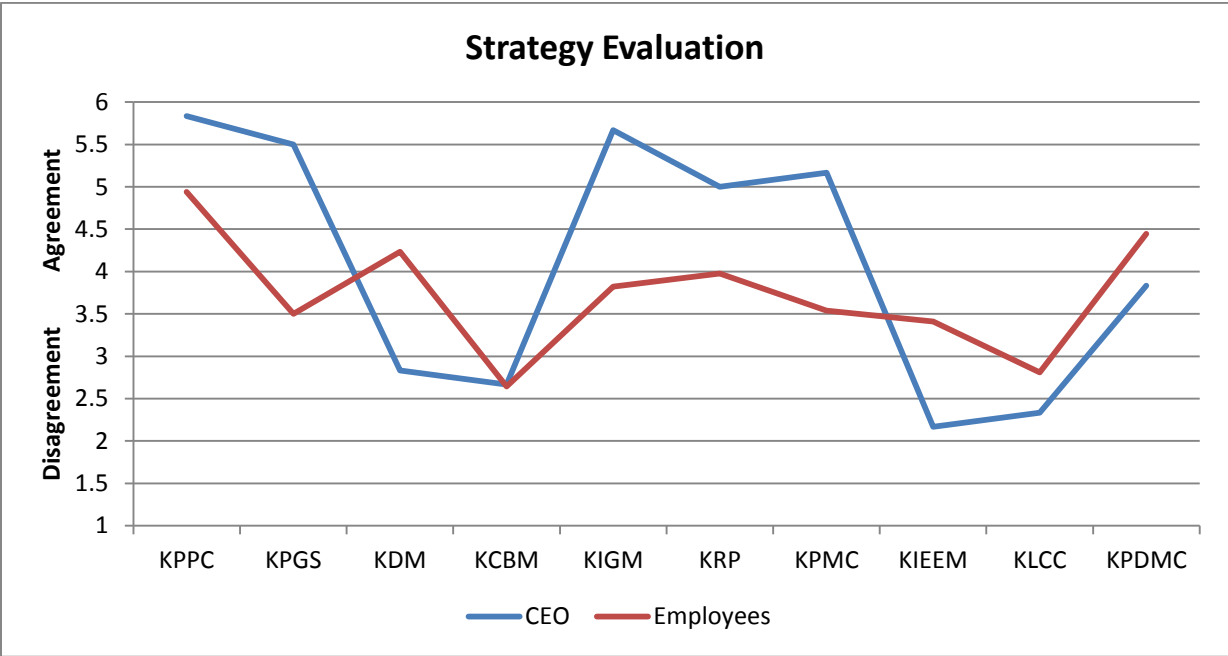


Figure 5.5.2: Strategy evaluation scores: employees vs. executive managers

In some companies like KPPC, KCBM, KLCC and KPDMC, there were no huge differences between the executive managers' scores and employee scores on strategy implementation and evaluation. In the other companies, KPGS, KDM, KIGM, KRP and KPMC, the levels of disagreement were much higher between employees and executives. For KIEEM, the two parties (executive managers and employees) almost agreed on strategy being implemented but did not agree on evaluation.

An ANOVA test was further conducted to test if strategy implementation and evaluation were being conducted differently across groups or organisational levels within the sampled companies. Results of this test are represented below.

Table 5.5.5: ANOVA Test (Strategy implementation and evaluation)

Position	N	Mean	Standard deviation			Test value = 3.5		
				df	F	p-value		
STRATIMP	Admin	159	3.1218	1.20816				
	Junior management	57	3.2265	1.05251				
	Middle management	63	3.5253	1.30269				
	Senior management	61	4.1729	1.07702				
	Total	340	3.4027	1.23723				
	Between groups				3	12.326	.005	
	Within groups				336			
Total				339				
STRATEVAL	Admin	159	3.5110	1.24472				
	Junior management	57	3.7763	1.01626				
	Middle management	63	4.2381	1.23656				
	Senior management	61	4.5779	1.06902				
	Total	310	3.8816	1.24570				
	Between groups				3	14.432	.005	
	Within groups				336			
Total				339				

Results from Table 5.5.5 above reveal that:

a) There is a noteworthy difference in the level of agreement that strategy implementation (STRATIMP) is practised across positions in the firms. In particular, senior managers agree significantly more than the other positions that strategy implementation is being practised.

b) A significant difference exists in the level of agreement that strategy evaluation (STRATEVAL) is practised across positions in the respondent companies. Senior managers, followed by middle managers, agree more significantly than junior managers that strategy evaluation is practised in their respective organisations.

5.6 Performance measurement system (PMS)

According to Gimbert et al. (2010:477-497), PMSs drive overall organisational performance and help organisations translate their visions and missions into goals and objectives that are achievable.

Respondents were asked about the existence or non-existence of PMSs / SPMSs in their organisations and they responded as follows:

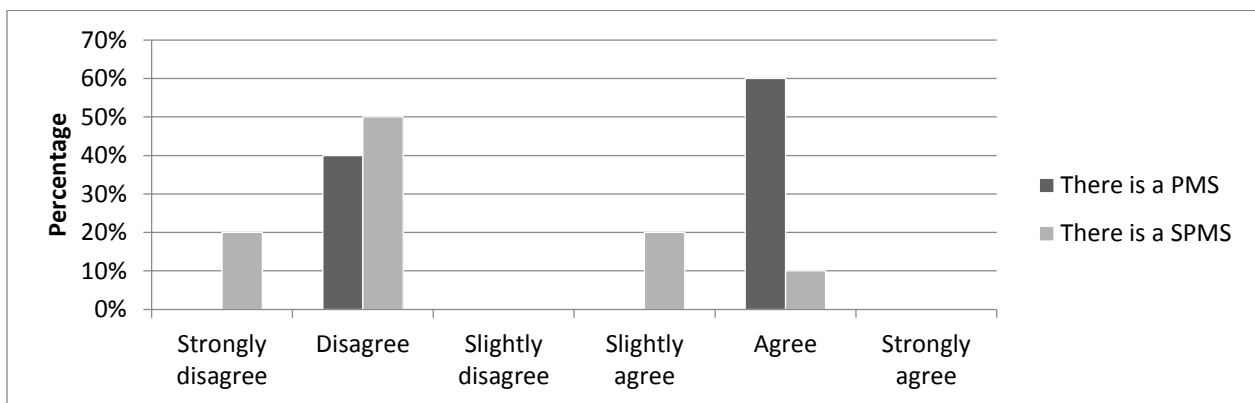


Figure 5.6.1: There is a PMS / SPMS

Regardless of the importance of PMSs that was cited above by Gimbert et al., (2010:477-497) and also in the literature review chapter, 40% of the respondents did not have PMSs in their organisations and 60% did. Gimbert et al. (2010:477-497)

further cited SPMSs as more concise and better than PMSs, as they integrate long-term strategy and operational goals and provide measures in different perspectives, including financial and non-financial.

Despite the popularity and effectiveness of SPMSs in measuring individual, departmental and overall performance, 70% of the sampled companies disagreed on their existence in their companies, while only 30% agreed that there were SPMSs in their organisations. However, out of the 30%, only 10% confidently agreed while 20% slightly agreed.

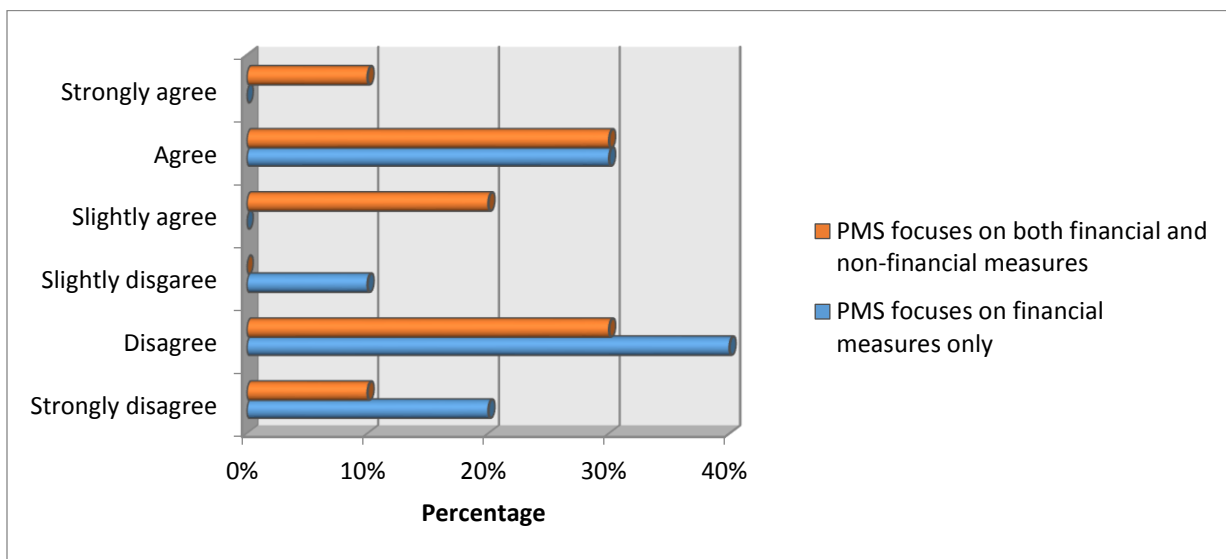


Figure 5.6.2: PMS focuses on financial / both financial and non-financial measures

Kaplan and Norton (2008) stated that PMSs should not focus only on financial measures but on non-financial measures as well. In agreement with these authors, 60% of the sampled manufacturing companies incorporate some non-financial measures, while 40% do still have their focus mainly on financial measures only.

5.7. Organisational performance

Organisational performance was clearly defined and discussed in the literature review. In manufacturing, it is the effectiveness of the organisation in implementing strategic decisions (manufacturing strategy), allocating and utilising resources (inputs)

economically, while efficiently incorporating business processes to generate outputs (good quality products).

In the hypothesised model in Chapter 3, organisational performance would be measured as follows:

- Financial performance - increased sales growth, profit margins, ROA, current ratio and acid test ratio, and
- Non-financial performance - customer measures, employee measures, business process measures and supplier measure.

The survey results on organisational performance will now be presented and discussed as follows:

➤ **Financial performance**

Table 5.7.1 below presents the annual average turnover of the respondent organisations.

Table 5.7.1: Average turnover of respondent enterprises for the past 5 years

Response	Frequency	Percent
R51m - R150m	6	60
R151m - R250m	2	20
R251m - R350m	1	10
>R350m	1	10
Total	10	100

From Table 5.7.1 above, 60% of the respondents had between R51 and R150 million in revenue over the past 5 years, making them medium-sized companies as stated in Chapter 4; 20% had between R151 – R250 million, with the remaining 2 companies having R251 – R350 million and an average of R350 million respectively, which according to Minister Lindiwe Zulu as quoted in Business Insider SA (2019), would be classified as large companies.

5.7.1. Overview of financial performance

Micheli and Manzoni (2010:465-476) stated that ratio analysis is essential for assessing an organisation's financial performance. However, the two authors also argued that using ratio analysis alone is not enough as a tool to measure the overall financial performance or condition of a firm, citing the major limiting factor of relying solely on ratio analysis as that of relying on historical performance. Micheli and Mura (2017:423-443) cited the importance of benchmarking a firm's financial indicators against the industry's international norms since markets have been globalised. This section of the chapter was mainly to compare the financial ratios of the selected KZN manufacturers against global norms, based on averages. The international norms were derived from the Corporate Finance Institute (2015 - 2020).

➤ Sustainability Ratios

The ability of an organisation to grow in the future is estimated by the use of two major ratios, average sales growth and cash flow ratios. The CFI believes that these two ratios provide stakeholders with valid information on whether a firm can sustain its performance and if it can keep growing in the long-run. The two sustainability ratios of the sampled enterprises are presented in the tables below.

Table 5.7.2: Percentage change in sales growth in the past financial year

Response	Frequency	Percent	Global norm
-1 - 10%	4	40	15
0%	1	10	15
+1 - 10%	4	40	15
+11 - 20%	1	10	15
Total	10	100	

The Corporate Finance Institute (CFI) (2015 - 2020) defined sales / revenue growth as the growth in a company's revenue in a financial year. Sales growth can be positive (increase) or negative (decrease). In the above table, 4 companies had a negative growth of between 1 – 10%, while one of the companies had no growth at all. Four companies had a positive growth of 1 – 10%, with only one company meeting the international standards with a growth of between 11 – 20%. The CFI further stated that revenue / sales growth is important to a business since revenue is the driver of profitability.

Table 5.7.3 Percentage change in cash flow-to-sales in the past year

Response	Frequency	Percent	Global norm
-1 - 10%	2	20	18
0%	3	30	18
+1 - 10%	4	40	18
+11 - 20%	1	10	18
Total	10	100	

The cash-flow-to-sales ratio is an indicator of how efficient by the management of a company is able to convert revenue into profits and working capital (net cash flow). Stakeholders normally use this ratio to evaluate a company's effectiveness and how it is managing its internal business processes (CFI 2015 - 2020).

Four firms in Table 5.7.3 above had a growth of between 1 – 10% in cash-flow-to-sales; three firms had no growth and one company was within the global norm percentage of between 11 – 20%. However, two of the respondent companies, had negative cash to sales ratio of between 1 – 10%. Cash flow, according to the CFI (2015 – 2020), is the core and lifeblood of any type of business. The negative growth in cash flow ratios of some of the respondents would mean that these companies might fail to meet their future obligations.

➤ **Liquidity ratios**

Liquidity ratios, according to the CFI (2015-2020), represent an organisation’s solvency and its ability to meet any current obligations. The current and acid test ratios are the most widely used and popular liquidity ratios. Results of these are now discussed below:

Table 5.7.4: Current ratio in the past financial year

Response	Frequency	Percent	Global norm
<1	4	40	2.6
1 - <2	4	40	2.6
2 - 3	2	20	2.6
Total	10	100	

The current ratio of the ten enterprises ranged from a low of less than 1 for the die, corrugated boxes, electronic equipment and chemicals manufacturers to a high of 2 – 3 for the printing and packaging industries. According to the CFI (2015-2020), if a current ratio is less than 1, it means that a company’s current liabilities are more than its current assets and will therefore fail to pay any obligations that fall due within a year or less. On the other hand, a current ratio more than 2 means a company is managing its working capital well and can cover its current liabilities and still remain with working capital to finance the business.

Table 5.7.5: Acid / Quick Ratio in the past financial year

Response	Frequency	Percent	Global norm
<1	4	40	1.5
1 - <2	6	60	1.5
Total	10	100	1.5

The quick / acid test ratio uses more liquid types of current assets to measure liquidity. The quick assets for the acid tests includes all current assets a company can sell for cash quickly, meaning that any prepayments and inventories are not included in the calculation (CFI 2015 -2020). A quick ratio of 1 is the standard global norm and it indicates that a firm can pay all its current liabilities with only those current assets that

can be sold quickly for cash. A quick ratio that is less than 1 means that a company will fail to pay its current liabilities using current assets that can be instantly liquidated. Four of the sampled companies in Table 5.7.5 above had acid test ratios below 1, while 6 companies could quickly pay off current liabilities if they fell due, with ratios between 1 - 2 and within the global standards.

➤ **Profitability Ratios**

Micheli and Manzoni (2010:465-476) described profitability ratios as those ratios that investigate how well and efficiently a firm employs and utilises its assets to generate profits. As stated in Chapter 2, profit margins and return on assets are the popular ratios that companies use to measure profitability. Results of these ratios were compared to global standards, as shown in Table 5.6.6 below.

Table 5.7.6: Percentage change in operating profit margin in the past financial year

Response	Frequency	Percent	Global norm
-1 - 5%	3	30	12
0%	1	10	12
+1 - 5%	4	40	12
+6 - 10%	1	10	12
+11 - 15%	1	10	12
Total	10	100	

The operating profit margin ratio, as stated by the CFI (2019), views the operating profit margin as the profit a company makes after paying all its direct costs, like raw materials, freight, wages, etc. This ratio is usually expressed as a percentage of sales. In this study, this ratio ranged from the lowest of -1-5% to the highest of +11-15%. The global norm cited by CFI (2019) was 12%, as shown in Table 5.6.6 above.

Table 5.7.7: Return on assets ratio in the past financial year

Response	Frequency	Percent	Global norm
<1	5	50	5.45
1 - <5	4	40	5.45
5 - <10	1	10	5.45
Total	10	100	

Return on assets (ROA) was described by Micheli and Manzoni (2010:465-476) as a company's degree of efficiency in utilising its assets as compared to the actual profits made. In this research, half the sampled companies had ratios below 1; 40% had ratios between 1- 4 and 10% were within the range 5-<10. Since return on assets measures efficiency and effectiveness in asset utilisation, a proper performance measurement system would assist in minimising wastage and in finding out where major deviations are originating from.

Based on the ratio analysis as shown in the tables above, it is clear that most of the calculated ratios of the sampled firms were below international standards.

This section compared how well KZN manufacturing companies are performing compared to other companies in the same sector globally. However, as argued by Micheli and Manzoni (2010:465-476), measuring performance from a single dimension is not enough in this dynamic and globalised economy. Companies also need to measure their non-financial performance to get a clear view of their overall performance.

➤ **Non-financial performance**

In Chapter 3 of this study, Micheli and Manzoni (2010:465-476) highlighted an increase in the importance of non-financial measures in PMM literature. They also argued that measuring performance from one perspective is not adequate, especially in the manufacturing sector that has to deal with dynamism and fast-paced technological advancements. Manufacturing companies need systems that are flexible to give room for innovation since product life cycles are becoming shorter. In this regard Kaplan and

Norton (2008) considered other important non-financial measures such as customers, internal business processes, learning and growth of employees.

Executive managers from the sampled companies were also requested to rate the degree of use of certain financial and non-financial measures in their organisations. Below are the results as shown in a one-sample t-test in Table 5.6.8 and Figure 5.6.1

Table 5.7.8: One sample t-test (Performance indicators)

Performance indicator	N	Mean	Standard deviation	Test value = 3.5		
				t	df	p-value
Revenue growth	10	4.90	.876	5.056	9	.001
Improved profit margins	10	5.10	.568	8.913	9	.005
Increase in working capital	10	4.70	.823	4.609	9	.001
Rate at which customers are retained	10	4.50	1.179	2.683	9	.025
Number of repeat purchases	10	5.00	1.247	3.803	9	.004
Measures of operational excellence	10	4.50	1.354	2.335	9	.044
Quality of product	10	5.50	.527	12.000	9	.005
Productivity	10	5.20	.919	5.850	9	.005
Number of product defects	10	4.90	.876	5.056	9	.001
Quality of raw materials delivered	10	5.30	.675	8.433	9	.005
Order cycle times	10	4.80	.789	5.212	9	.001
On-time delivery from suppliers	10	5.20	.789	6.815	9	.005

* denotes significance at a .05 level

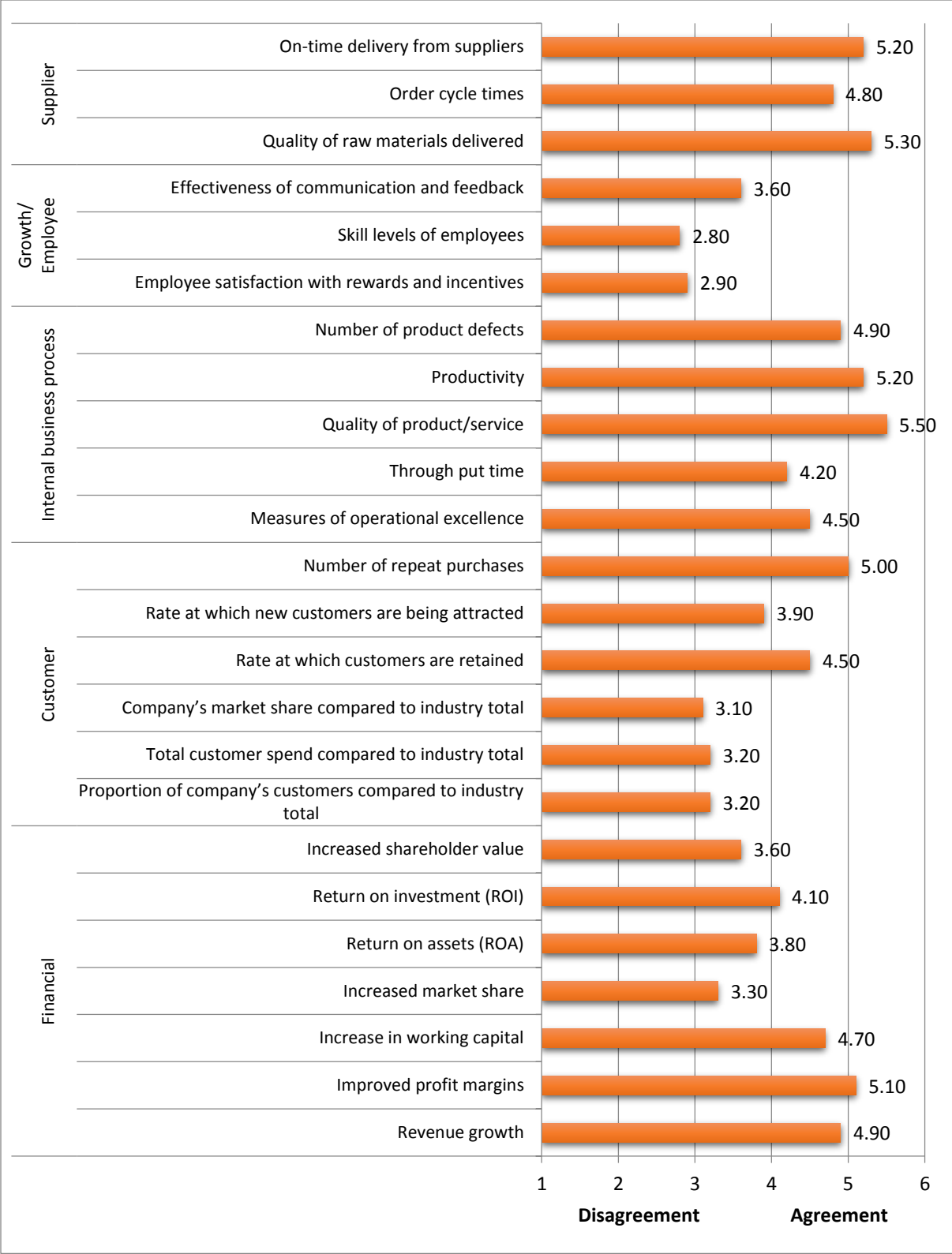


Figure 5.7.1: One sample t-test (Performance indicators)

➤ **Financial**

Although businesses are advised not to concentrate on the financial perspective alone when measuring performance, the financial perspective still plays a crucial role in a PMS because financial performance equates to organisational success and effectiveness (Micheli and Manzoni, 2010:465-476). Measures that businesses usually use to reflect financial performance are ROA, revenue growth, improved profit margins, increased working capital, increased shareholder value, increased market share and Return on investment (ROI). As shown in Table 5.7.8 above, there was significant agreement amongst executive managers that revenue growth, profit margins and working capital were the most commonly used financial measures in the sampled organisations. No significant agreement or disagreement was shown towards the use of market share, shareholder value and ROA as financial indicators, as shown in Figure 5.7.1.

➤ **Customer**

As highlighted in the introductory chapter, today's customers have become more demanding. Information on products and their substitutes is readily available on the internet and payments can be done instantly online, thanks to advanced technology. Customers are no longer only just looking for good quality products, but they also want to deal with suppliers who can satisfy all their needs in terms of price, delivery time and after-sale service. Manufacturers need to also realise that competition has shifted from just producing a good product to customisation, efficiency and innovation. A satisfied customer leads to repeat purchases and brand loyalty, which in turn impacts on increased revenue and better financial performance (Pekkola, 2013). This understanding, however, has not been reflected in the ten sampled companies of KZN. Empirical results, Table 5.7.8 above show that, out of the 6 indicators that companies use for customer performance, the sampled enterprises only agreed significantly on using two of the measures: rate at which customers are retained and number of repeat purchases. There was, however, no significant agreement or disagreement on the use of the other four customer measures, as shown by the results in Figure 5.7.1 above.

➤ **Internal processes / operational measures**

As argued by Kaplan and Norton (2008) and as highlighted in the literature review, getting high performance ratings in internal business processes results in good quality products that are efficiently and cost-effectively produced, which results in customers being satisfied and repeating their purchases. The types of internal process measures that were used to evaluate this quadrant were: number of product defects, productivity, quality of product, throughput time and measures of operational excellence. Results of this study show a significant agreement amongst managers with the use of all the 5 performance indicators for internal business processes, namely: measures of operational excellence, productivity, number of product defects and through put time, M=4.20. The most widely used internal processes performance indicator was quality of product.

➤ **Learning, growth and development**

As highlighted in Chapter 3 by Kaplan and Norton (2008) and as one of non-financial quadrants of the BSC, this quadrant attributes both individual and corporate improvement to employee training and development. Gomes et al. (2011:5-30) study argued that if employees are satisfied and delighted, they become motivated to be more productive and efficient, therefore dedicating themselves to ensuring organisational success. Despite the importance of this perspective of the BSC as mentioned above, the results from this survey show neither significant agreement nor disagreement to employee growth and development performance indicators being used in the sampled companies.

The lower company ratings in this quadrant may result in de-motivated employees who are not efficient, product quality would be lowered and production costs will increase. If employee satisfaction and retention ratings are low, staff turnover rates will increase, resulting in companies losing talented and skilled employees. This in turn leads to poor financial and overall performance of the organisation (Gomes et al., 2011:5-30).

➤ **Supplier performance**

As cited by Flynn et al. (2010:58-71) in the literature review, supplier performance is vital to manufacturers since they need to ensure that the raw materials supplied are of good quality, are delivered on time and at the agreed price. This helps in the value chain that was discussed in Chapter 3, where value should be added at each stage of production from inbound to outbound logistics. Doing this ensures a good quality product, efficiency and effectiveness in business processes, resulting in satisfied customers, increased profits. The market share of the company also increases in the long-term. Most of the respondents in this study agreed with Flynn et al. (2010:58-71) as they showed significant agreement with the use of all the three supplier performance indicators as shown in Table 5.7.8.

As with the strategy constructs, single meaningful measures were formed for each of the five performance measures. As before, these single measures were tested for reliability using Cronbach's alpha. The new names for the performance measures were: financial measures = PMFIN (alpha = .860), customer = PMCUS (alpha = .937), internal business processes = PMIBP (alpha = .887), growth / employee measures = PMGE (alpha = .824) and supplier measures = PMSUP (alpha = .928). The results of Cronbach's alpha meant that all these single measures were reliable, as summarised in Table 5.7.8B below.

Table 5.7.8B: Cronbach's alpha (Performance indicators)

Performance indicator	Name	Items included	Cronbach's alpha
Financial	PMFIN	D2.1 – D2.6	.860
Customer	PMCUS	D3.1 – D3.6	.937
Internal business process	PMIBP	D4.1 – D4.5	.887
Growth/ Employee	PMGE	D5.1 – D5.3	.824
Supplier	PMSUP	D6.1 – D6.3	.928

To test for significant agreement or disagreement that each of these performance measures is used, a one sample t-test was used again, as shown in Table 5.6.9 below.

Results of the one sample t-test show that PMFIN, PMIBP and PMSUP are the commonly used performance measures in the 10 firms. The results from Table 5.6.9 also show that PMSUP is the one mostly used, followed by PMIBP and then PMFIN. PMGE is the one used the least. The popularity of supplier performance indicators in this study justify the need to include this perspective on the BSC, which is going to be developed in the next chapter since raw materials are the starting point of any manufacturing company.

Table 5.7.9: One sample t-test (Performance measures)

Performance measure	N	Mean	Standard deviation	Test value = 3.5		
				t	df	p-value
PMFIN	10	4.3167	.90079	2.867	9	.019
PMCUS	10	3.8167	.98898	1.013	9	.338
PMIBP	10	4.8600	.84879	5.067	9	.001
PMGE	10	3.1000	1.33380	-.948	9	.368
PMSUP	10	5.1000	.70361	7.191	9	.005

* denotes significance at a .05 level

5.7.2 Correlation analysis

In Chapter 1, the researcher stated that she aimed to develop an integrated performance measurement model (SPMMS) in the form of a BSC which would assist manufacturing companies in understanding the relationships between strategy, the performance measurement system and organisational performance.

This section of the study therefore focuses on testing the hypotheses formulated in Chapter 3. In order to be able to test for correlations amongst the constructs of strategy (formulation, implementation, evaluation and re-formulation) and organisational

performance (financial and non-financial), single measures for financial and non-financial organisational performance were first calculated as follows:

For a single measure for financial performance, all the ordinal values for each of the 7 measures were summed up and the results are presented in the frequency table below (Table 5.7.9B). The single name for financial performance is FINPERF.

Table 5.7.9B: Frequency table (financial performance scores)

FIN PERF score	Frequency	Percentage
20.00	1	10.0
21.00	3	30.0
27.00	1	10.0
29.00	1	10.0
30.00	2	20.0
32.00	1	10.0
38.00	1	10.0
Total	10	100.0

For each of the 4 non-financial performance perspectives, the scores were reduced to single measures and were then tested for reliability, as shown in Table 5.6.9C below.

Table 5.7.9C: Cronbach's alpha (Non-financial performance indicators)

Performance indicator	Name	Items included	Cronbach's alpha
Customer	PERFCUSEXT	E2.1 – E2.3	.982
	PERFCUSINT	E2.4 – E2.6	.840
Internal business process	PERFIBP	E3.1, E3.2, E3.4	.846
Growth/ Employee	PERFGE	E4.1 – E4.3	.829
Suppliers	PERFSUP	E5.1 – E5.3	.947

With an average Cronbach's alpha of 0.8888, the calculated single measures were reliable to use. Customer measures were split into two in order to get 2 reliable single measures. These were named: internal customer performance (CUSPERFINT) and external customer performance (CUSPERFEXT).

Spearman's correlation was then calculated, the results of which are presented in Table 5.7.10 below.

Table 5.7.10: Spearman's correlation matrix: Association between strategy and organisational performance

Spearman's rho	FINPERF	CUSPERFEXT	CUSPERFINT	IBPPERF	GEPERF	SUPPERF
STRATFORM: Correlation coefficient	.821**	.792**	.835**	.469	.605	.505
p-value	.004	.006	.003	.171	.064	.137
N	10	10	10	10	10	10
STRATIMP: Correlation coefficient	.726*	.622	.799**	.486	.739*	.366
p-value	.017	.055	.006	.154	.015	.298
N	10	10	10	10	10	10
STRATEVAL: Correlation coefficient	.942**	.750*	.732*	.468	.554	.628
p-value	.000	.012	.016	.173	.097	.052
N	10	10	10	10	10	10
STRATREFORM: Correlation coefficient	.753*	.550	.792**	.451	.657*	.352
p-value	.012	.099	.006	.191	.039	.276
N	10	10	10	10	10	10

Note: Correlation is significant at * $P < 0.005$

STARTFORM = Strategy formulation

STRATEVAL = Strategy evaluation

STRATIMP = Strategy implementation

FINPERF = Financial performance

STRATREFORM = Strategy re-formulation

CUSPERFINT = Customer performance

IBPPERF = Internal business processes performance

CUSPERFEXT = Customer performance

GEPERF = Growth / Employee performance

SUPPERF = Supplier performance

Table 5.7.10 above shows the existence of a strong positive correlation between the presence of strategy formulation in a firm and its financial as well as customer performance. Strong positive correlations also exist between strategy implementation and employee performance. Strategy evaluation has strong correlations with financial

and customer performance as well, while strategy reformulation has strong correlations with financial, customer and employee performance.

Strategy implementation also has a significant correlation with financial performance.

The higher agreement that strategy is practised is associated with better organisational performance.

These results support the following hypotheses formulated in Chapter 3:

H2: There is a positive association between the use of integrated SPMSs and the frequency of strategy re-formulations.

H3: There is an indirect positive relationship between the effective implementation and evaluation of strategy and organisational performance through the incorporation of financial and non-financial measures.

Kaplan and Norton (2008) indicated the existence of a causal relationship between non-financial measures and the actual financial performance of a firm. These two authors also concluded that if companies are made aware of this link, they would employ the best possible strategies to improve their financial performance by incorporating non-financial measures. It was also expected, by the same authors, that if manufactures keep training, developing and satisfying their employees, they would achieve improved performance in the internal business processes perspective, leading to better customer service and eventually seeing improved financial performance, hence overall organisational performance.

The cross-tabulation results (Appendix I) from the executive managers' questionnaire also reveal that strategy (formulation, implementation, evaluation and re-formulation) indeed has a positive association with organisational performance. This is explained by the firms: KPPC, KPGS, KIGM, KRP and KPMC which scored the highest on strategy measures and also had positive sales growth, profit margins and have higher current and acid test ratios. Although only three of the above companies stated the existence of SPMSs in their organisations, all the five firms have PMSs which incorporate both financial and non-financial performance measures. This also supports **H3** below which states that an association exists between strategy and organisational performance

through the use of PMSs that incorporate financial and non-financial performance measures.

To test the last hypothesis, correlation analysis was also used by testing how the scores of the executive managers on use of both financial and non-financial performance indicators were associated with organisational performance. As stated in Chapter 3, SPMSs are those systems that incorporate financial as well as non-financial measures. Therefore the performance measures (financial, customer, internal business processes, growth / employee and supplier) were used to represent SMPMs while both financial and non-financial performance were used to represent organisational performance. The hypothesis that was formulated is:

H1: There is existence of a positive relationship between the use of SPMMSs and organisational performance

To test the above hypothesis, Spearman's correlation was used and the results are presented in the table below.

Table 5.7.11: Spearman's correlation matrix: Association between a firm's performance and the extent of use of both financial and non-financial performance measures in the form of a SPMMS.

Spearman's rho	FINPERF	CUSPERFEXT	CUSPERFINT	IBPPERF	GEPERF	SUPPERF
PMFIN: Correlation coefficient	.742*	.523	.458	.137	.425	.449
p-value	.014	.121	.183	.707	.220	.193
N	10	10	10	10	10	10
PMCUS: Correlation coefficient	.855**	.771**	.654**	.231	.457	.422
p-value	.002	.009	.040	.520	.184	.224
N	10	10	10	10	10	10
PMIBP: Correlation coefficient	.536	.840**	.414	.530	.648*	.469
p-value	.110	.002	.235	.115	.043	.171
N	10	10	10	10	10	10
PMGE: Correlation coefficient	.424	.270	.589	.827**	.901**	.635*
p-value	.222	.451	.073	.003	.000	.049
N	10	10	10	10	10	10
PMSUP: Correlation coefficient	.810**	.725*	.710*	.629	.726*	.623
p-value	.005	.018	.018	.051	.017	.054
N	10	10	10	10	10	10

Note: Correlation is significant at * $P < 0.005$

Results from this study as shown in Table 5.7.11 above revealed that strong associations exist between PMSs that incorporate financial measures with better financial performance and the incorporation of customer measures is correlated with better financial and customer performance. This supports the researcher's hypothesised model in figure 3.10 in chapter 3 where she showed a direct association between PMSs with both financial and non-financial measures and overall organisational performance. A strong correlation also exists between internal business process measures and customer as well as employee performance. Incorporating growth and development measures in a PMS is also associated with better performance in internal business processes, in employee efficiency and in supplier performance. An organisation that incorporates supplier measures also experiences better financial performance, better customer performance and better employee performance.

From the results of the correlation analysis in Table 5.7.11, it can be concluded that companies should not concentrate on financial performance alone as it pays to also measure performance from a balanced angle by focusing on non-financial performance as well.

5.8 Summary

The researcher conducted a survey on ten KwaZulu-Natal manufacturing companies and investigated how these enterprises measure their performance and the type of performance measurement systems in place. A survey instrument in the form of a structured questionnaire was used. The respondents in this study were executives or directors, senior, middle and junior managers, as well as lower level employees from each department of the manufacturing companies. Financial profiles of the selected organisations were presented and commonly used average financial ratios of the respondent companies were compared against international industry norms. Most of the ratios showed large deviations when compared to the global norms.

Descriptive analysis was used to assess the degree of adoption of financial and non-financial measures. Correlation analysis was employed to examine: (a) the relationship between the use of a SPMMS and overall organisational performance and (b) the relationships between the financial performance and the use of financial as well as non-financial performance measures in the sampled companies. The results of the conducted Spearman's correlation analysis revealed a distinct and positive association between an organisation's financial performance and the attention such an organisation gave to non-financial measures like employees, business processes and customers. The presented correlation analysis also showed that strategy (formulation, implementation, evaluation and re-formulation) was significantly and positively correlated with both financial and non-financial performance (customer, internal processes and employee performance).

The importance of manufacturing to South Africa, to other developing countries and to the world as a whole can never be over-emphasised. It was established in literature that a strong causal association exists between manufacturing output growth and the growth of GDP (Pacheco-López and Thirlwall, 2013). However, as Gomes et al. (2011:5-30) pointed out, there is need for a SPMMS that is only designed for manufacturing companies, which according to these authors, does not exist currently.

In South Africa, Deloitte and Touche HCC (2009) conducted a survey in which they concluded that as much as 95% of the workforce in South Africa does not understand their companies' strategies; 70% of organisations' management incentives are not linked to company strategy; and only 37% of South African companies use strategic performance measurement systems, while the majority of companies still use only financial performance measurement like gross profit, net profit and ratios: measurements which, according to Taticchi et al. (2012b:593-614), do not provide adequate strategic direction and guidance to companies that want to stay competitive. A press release issued by Copywise Johannesburg on 17 October 2006 stated that despite the widespread use of very good financial accounting and information systems and software, many South African companies are still struggling to achieve a single, balanced view of their performance. Findings from this research also concur with the

above researches by Deloitte and Touche and Copywise, as most companies in this research are still relying mainly on financial measures and then only pick a few other non-financial indicators of performance.

Based on previous research as discussed in Chapter 3 and from findings of this research, it is important to develop a model (SPMMS) which will assist manufacturing companies in understanding the relationships between strategy, performance measurement and organisational performance and how this relationship will enhance their overall organisational effectiveness.

As stated in Chapter 1, an integrated performance measurement model: the Balanced Scorecard (BSC) by Kaplan and Norton, will be used as reference for the study as it incorporates an integrated measurement system in the form of both financial and non-financial performance measures.

This chapter aimed at presenting the results from the survey instrument in a more descriptive way. The next chapter's aim is to develop an integrated SPMMS for manufacturing companies.

CHAPTER 6

DEVELOPMENT OF A STRATEGIC PERFORMANCE MEASUREMENT AND MANAGEMENT SYSTEM FOR MANUFACTURING COMPANIES

6.1. Introduction

A survey was conducted on ten manufacturing companies in KwaZulu-Natal. Results and findings from the descriptive analysis section discussed in Chapter 5 revealed that the manufacturing companies still rely mainly on traditional financial measures and a few non-financial measures which, according to Michelli and Manzoni (2010), lack objectivity. However, results from Spearman's correlation analysis, also discussed in Chapter 5, revealed that a positive association exists between PMSs which incorporate both financial and non-financial measures with overall organisational performance.

It was also highlighted in Chapter 3 by various authors, for example Micheli and Manzoni (2010:465-476) and Meyer (2008:113-124), that PMSs must be based and linked to corporate strategy, vision and objectives of the company. Moreover, according to Kaplan and Norton (2008), companies that understand these interconnections will choose and execute the best strategies to achieve goals and objectives, while this linkage also impacts on organisational effectiveness. The same authors also agreed that PMSs should incorporate financial and non-financial measures and should be designed with specific metrics, targets and objectives. However, the findings from the survey reveal that none of the respondent companies are using PMSs that can be classified as SPMMSs since none of the companies met all the crucial guidelines of SPMMSs and also since none of the companies incorporates all the non-financial indicators in their PMSs.

As Gomes et al. (2011:5-30) pointed out in the literature review section, there is currently no strategic performance measurement and management system (SPMMS) that is appropriate for manufacturing companies and networks.

This chapter's aim therefore is to develop a SPMMS for manufacturing companies to assist these companies to understand the relationships between strategic management, performance measurement and organisational performance and how this relationship will enhance their overall organisational effectiveness.

Requirements of strategic performance measurement and management systems (SPMMSs) were discussed in detail in the literature review. These requirements were used to formulate the questions that were used in the survey instrument and will also be used in this section to illustrate why existing SPMMS discussed in Chapter 3 and PMSs in the surveyed companies do not suit manufacturing companies. These guidelines and requirements for SPMMSs will also give a guide and direction on setting up and developing a SPMMS and will highlight why the BSC was chosen as an integrated reference model which could assist manufacturing companies to understand the importance of incorporating financial as well as non-financial measures in their performance measurement and management processes.

6.2. Re-evaluation of existing SPMMSs

The evaluation of PMSs in this section aims to establish which of them is appropriate for manufacturing networks, as guided by the requirements of SPMMSs highlighted in the literature review.

Using information from different authors like Kaplan and Norton (2008), Neely et al. (2002), Neely et al. (2008), Keegan et al. (1989), Khan and Shah (2011), and Carr and Nanni (2009), existing PMSs were matched against the requirements of SPMMSs by using Harvey balls to evaluate how well they met SPMMS requirements. If a Harvey ball is completely shaded in black, it means that the SPMMS requirement is completely met. A non-shaded, white Harvey ball means one requirement is not met at all. The shaded area in the Harvey ball shows the proportion of the requirement that was met by the PMS.

All the PMSs in Figure 6.1 below met the requirement: focus on financial measures in full; and all Harvey balls are completely shaded for that requirement. The incorporation of non-financial measures was met in full by only three SPMS, while the other three only met the requirement partially.

	<i>Tablea u de Bord</i>	<i>SMART</i>	<i>Performance Measurement Matrix</i>	<i>EFQM Excellence Model</i>	<i>Performance Prism</i>	<i>Proposed Model (BSC)</i>
Focus on company strategy	○	○	○	◐	○	●
Focus on financial measures	●	●	●	●	●	●
Incorporates non-financial measures	◐	◐	●	◐	●	●
Periodical update	◐	●	◐	●	●	●
Contains explicit metrics, targets, goals and objectives	○	○	○	○	○	●
Incorporates measures addressing improvement projects	○	○	◐	◐	●	●
Incorporates performance measures that address change projects	○	○	◐	◐	●	●
Measures are linked to mission, vision and overall strategy	●	○	○	◐	○	●

Strategy, targets, goals and objectives are clearly communicated	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Incorporates supplier perspective and delivery system from supplier to customer	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adaptable to different organizational structures	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Incorporates performance measures for stakeholder interaction quality	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Focus on continuous organizational improvement	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
There is regular feedback on individual and organizational performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Figure 6.1: Evaluation of existing SPMS

Source: extended by author from literature review

Four out of the six PMSs also met the periodical updates requirement, revealing the importance of this requirement to performance measurement and PMSs. Hence, this should be integrated into the developed SPMMS. The proposed model, (BSC), only meets some stakeholder satisfaction as it incorporates customer, employee and investor satisfaction in its non-financial perspectives. However, the current BSC does not fulfill all the stakeholder groups as it does not incorporate the supplier perspective. Suppliers and supply chain management as discussed in Chapter 3 play a crucial role in the value chain of any manufacturing business (Kaplan and Norton, 2008). From Figure 6.1 above, it can be proven that none of the PMSs are fulfilling all the requirements of

manufacturing performance measurement, although the BSC meets most of the requirements of a SPMMS. This justifies why it was chosen as a reference model for this research. However, some SPMMS have aspects that can be interesting in defining a SPMMS for manufacturing companies.

The list of requirements and guidelines for SPMMS, together with the results from the survey showing the shortcomings of the existing PMSs / SPMMS being used in the sampled companies will be used to develop the proposed BSC for manufacturing companies.

6.3. Defining Performance Dimensions for Manufacturing Organisations

Figure 6.2 below shows that stakeholders are divided into two groups: employees and suppliers (those that provide input for manufacturing) and investors and customers (those that evaluate manufacturing output). According to Pekkola (2013), employees bring their skills and expertise to the internal business activities of manufacturing firms while suppliers bring in the raw materials. Hence the name 'input stakeholders'. Customers receive the product and evaluate its quality, whether it meets their needs or not, while investors evaluate the return on investment. Hence the name 'output stakeholders'.

After identifying its stakeholders, the manufacturing company can then set its targets, goals and objectives so that organisational effectiveness is achieved, resulting in the satisfaction of the identified stakeholders. However, the company has to establish how stakeholder satisfaction is going to be measure. According to Pekkola (2013), this is achieved by formulating performance measures for each stakeholder based on and derived from the formulated manufacturing strategy. In order to meet the set goals and objectives, an organisation needs to identify the infrastructural and structural levers required, which according to Figure 6.3 below would be the inputs from employees (skilled labour) and from suppliers; good quality products (raw materials) which should be delivered on time and at the agreed cost; efficiency in business processes; effective

leadership from site managers; proper planning and control of production activities; and total quality control, as examples.

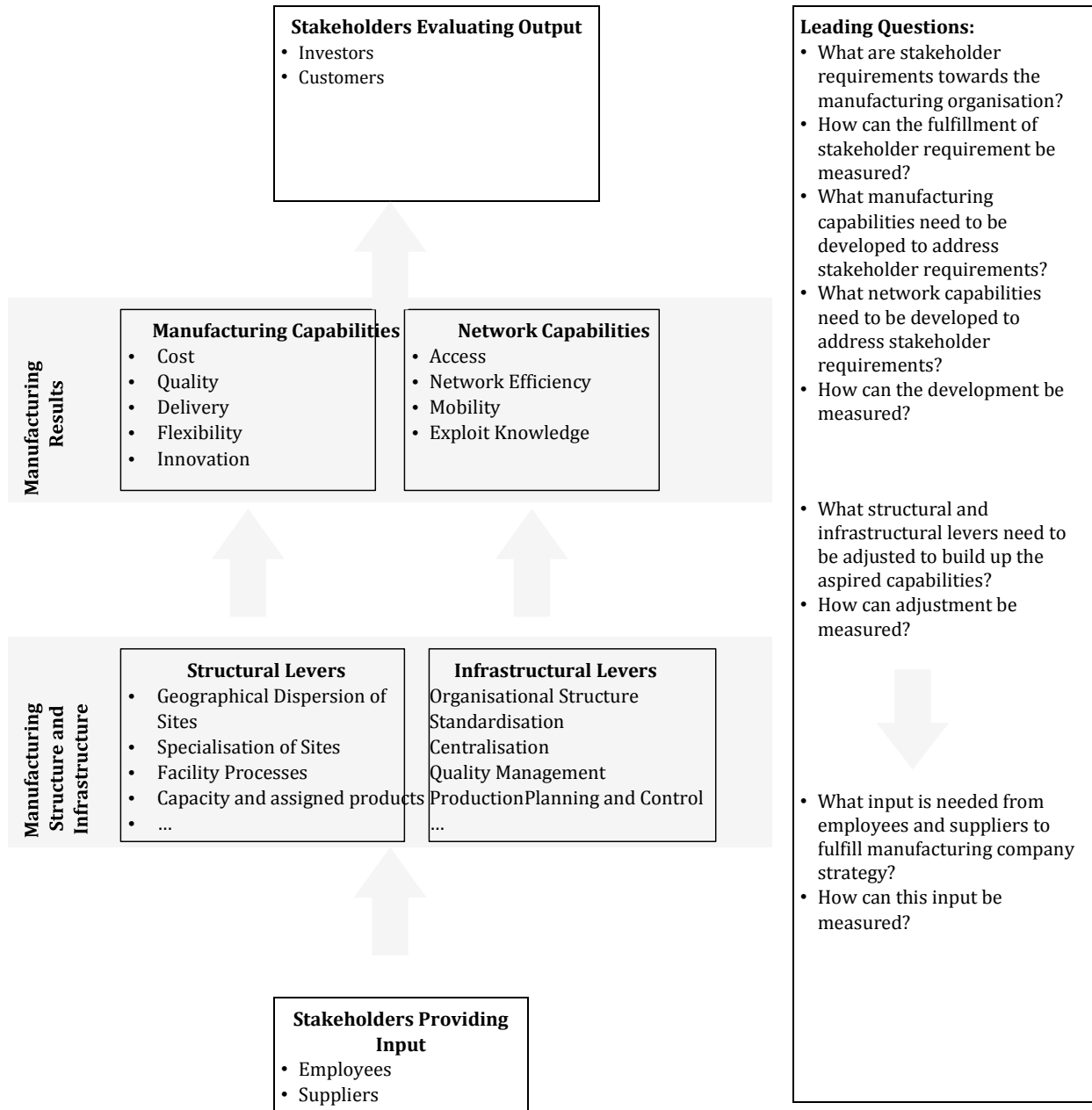


Figure 6.2 – Performance Dimensions for Manufacturing Networks
 Source: Pekkola (2013)

In a strategic setup, the dimensions of the manufacturing network are linked. As stated in Chapter 3, a company is only said to have performed well when it has managed to meet the demands placed on it by its stakeholders. The fact that performance dimensions are linked also means that mistakes in one dimension affect the whole system and its outcomes. However, Pekkola (2013) cited that not all dimensions apply to every manufacturing company. Organisations will only choose and apply those dimensions that suit their specific goals and objectives, according to their manufacturing strategies.

6.4. Developing the SPMMS (BSC)

The manufacturing strategy definition and formulation processes discussed in Chapters 2 and 3, guidelines of SPMMSs and findings from this study are going to be merged in order to create a procedural framework for the BSC development in manufacturing organisations. Pekkola (2013) cited investors, customers, employees and suppliers as the most important stakeholders. These were then grouped by the researcher into perspectives according to Kaplan and Norton's (1996) BSC perspectives as follows: financial perspectives (investors), customer, employee and growth. The balanced scorecard has another perspective which is not on Pekkola's (2013) list of stakeholders: internal business processes. However, one of the stakeholders on Pekkola's (2013) list, the supplier, is not on the BSC perspectives but was included as a fifth perspective of the BSC to be developed for this study. The perspectives of the developed BSC will therefore be as follows: **i) financial, ii) customer, iii) internal processes, v) learning and growth and vi) supplier** (the additional perspective to the original BSC which had four perspectives). The performance measures for the original four perspectives were already discussed in the literature review. The measures for the additional perspective to the BSC (supplier) are listed below as suggested by Niven (2002).

Table 6.1: Supplier measures

<p>PROCUREMENT On-time delivery Order-cycle time Response time Just-in-time delivery (JIT)</p> <p>QUALITY Overall customer satisfaction On-time delivery Accurate product selection Damage free</p>	<p>COST Cost of goods Transportation costs Inventory-carrying costs Material handling costs Information systems Administrative Cost of excess capacity Cost of capacity shortfall</p> <p>SRM Supplier integration Minimum order quantity Supplier performance Inventory optimisation</p>
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Source: Niven (2002)

Now that the requirements of the SPMMSs have been identified and evaluated; basic performance dimensions for manufacturing companies defined; necessary perspectives for the new SPMMS identified; main stakeholders listed; and the whole procedural framework defined, this section will focus on the actual process of developing the SPMMS.

In order to do this, the researcher used one of the sampled manufacturing companies as a case study: the KZN Printing and Packaging Company (KPPC), so that the specific strategy, goals and objectives for a particular company would be used to construct the strategy map. Figure 6.3 summarises the overall procedural framework for developing a SPMMS. This process is described in detail step-by-step as follows:

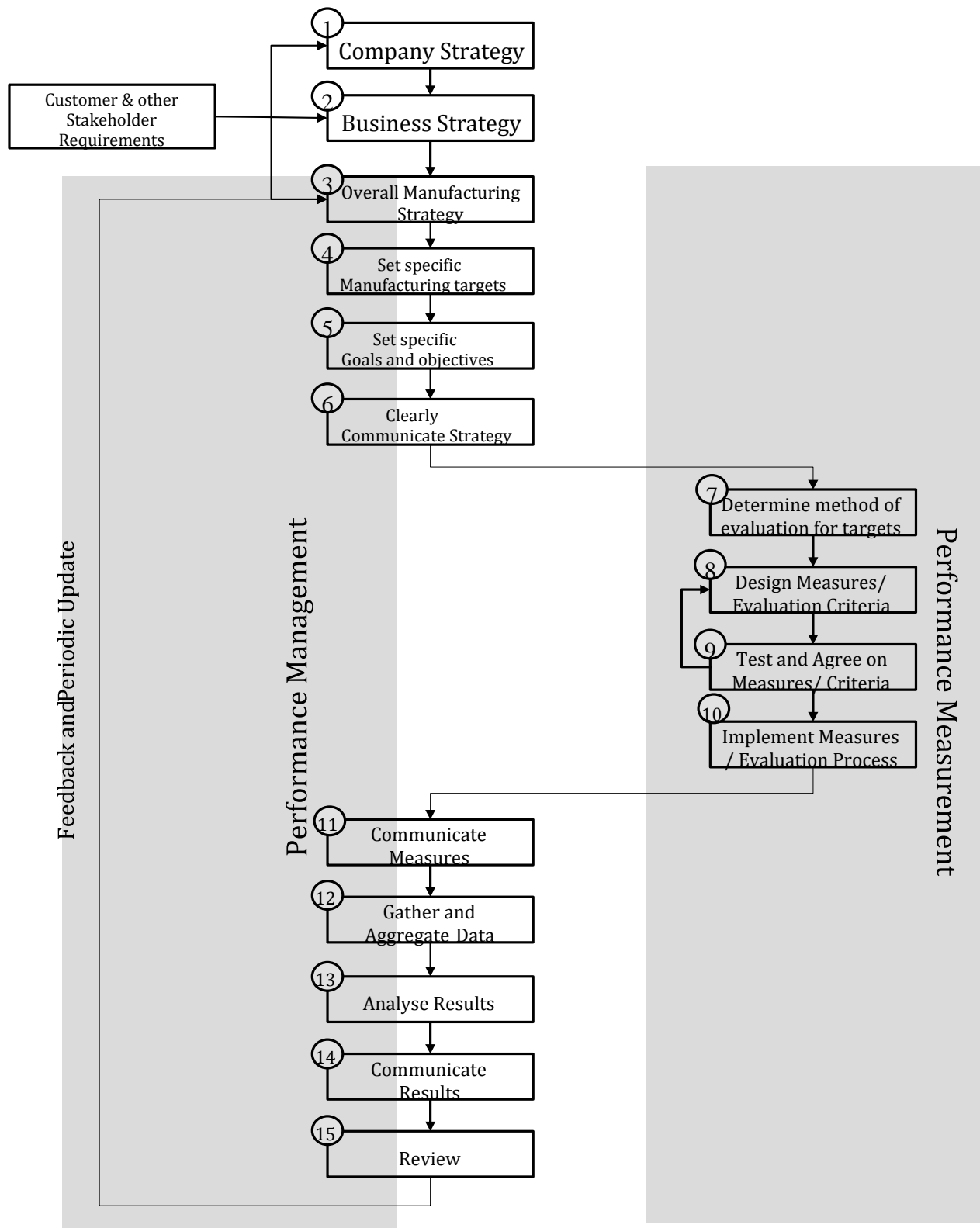


Figure 6.3 – Procedural Framework for developing a SPMMS in manufacturing companies
 Source: Adapted from Bititci et al. (2012:305-327)

The stages that are set out below were derived from different authors who have conducted studies on strategy and the BSC, namely: Bititci et al. (2012:305-327); Bourne and Bourne (2007); Mackay (2004:22); Niven (2002); and Kaplan and Norton (1992 - 2008).

6.4.1 Formulate strategies

Company strategies are set by executive managers and then communicated to the lower levels. In the diagram above, company strategy is formulated in step 1. Business strategy (step 2) and this is set in line with the demands and requirements of major stakeholders. When a business strategy has been formulated, Thompson et al. (2007: 28-35) suggested that the company conducts a SWOT analysis to know which strategies could be pursued when defining the manufacturing strategy, as shown in step 3 of diagram 6.3 above. Manufacturing strategy definition and formulation were discussed in detail in Chapters 2 and 3. The most important strategies for KPPC which were also extended onto their strategy map (discussed in detail in section 6.4) were:

- To increase ROI (financial strategy);
- To improve productivity (productivity strategy);
- To incorporate financial as well as non-financial measures in the PMS (this is shown by the different perspectives: learning and growth, supplier, internal processes, customer and financial on the strategy map);
- To acquire customer relationship management (CRM) and supplier relationship management software; and
- To introduce a JIT (Just-In-Time) inventory system.

6.4.2 Setting specific targets, goals and objectives

In order for the above strategies to be fulfilled, KPPC had to set specific targets, goals and objectives. The importance of setting targets, goals and objectives was discussed in detail in Chapter 3. However, the reason why most companies set goals and

objectives, as noted by Stritesska and Spickova (2010), is that they give a clear focus and direction and also help both the company and employees to stay on track and be motivated. From the strategy map for KPPC in section 6.4 of this chapter, some of the set goals and objectives were:

- To meet financial targets and budgets
- To meet production targets
- To adhere to accurate financial reporting
- To improve environmental health and safety
- To improve employee technical skills
- To attract more customers
- To innovate new products and
- To increase working capital.

The specific targets set by the company were:

- To increase revenue by 15%
- To increase profit margin by 10%
- To reduce operating costs by 3% and
- To increase ROA to 7.

6.4.3 Selection of a project manager

The formulated strategies and set targets and goals above needed to be communicated from top to bottom so that they could be implemented effectively and cost-effectively. For this to be achieved, KPPC selected a scorecard champion as suggested by Bourne and Bourne (2007) so that she could lead the company as a project manager in the development of the BSC. For KPPC, the new quality assurance manager was the best choice since she was an influential executive manager and had overseen a similar project in her previous company. The role of the quality assurance manager as the scorecard architect was to guide the development process, select a team to implement the project, schedule meetings with the chosen team, keep project documentation and to make sure that the BSC development project was completed within the scheduled time-frame.

6.4.4 Setting timeframes

Kaplan and Norton (1996:308) suggested that, as with any project, it is important for the architect to also set time-frames for the designing, development, implementation and data collection of the new BSC. This is important because it provides direction to the implementation team as they focus on meeting the deadline, helping them avoid wasting time. The quality assurance manager for KPPC used Kaplan and Norton's (1996:308) 16-week guideline as the timeframe for the project team to have designed, developed and implemented the BSC. The architect's role was more intense during the first eight weeks, after which she got more assistance from executive and senior managers for the development stage. The project manager drew the diagram below (Figure 6.4) to illustrate the proposed time-frames of all the stages that were followed, as shown in Figure 6.3 above. The implementation, data gathering and analysis and communication of results will be discussed in Chapter 7.

WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ACTIVITIES																
1. Select project manager	■	■	■	■												
2. Select project team	■	■	■	■												
3. Select scorecard perspectives	■	■	■	■												
4. Meeting with executive managers					■	■	■	■								
5. Functional manager and employees workshop					■	■	■	■								
6. Strategy mapping with senior managers									■	■	■	■				
7. Implementation of BSC									■	■	■	■				
8. Data collection and analysis													■	■	■	■
9. Communication of results													■	■	■	■
10. Evaluation of performance													■	■	■	■

Figure 6.4: The BSC development and implementation timeline for KPPC

Source: Author's own (Based on Kaplan and Norton, 1996:308)

6.4.5 Selection of project team

Every project needs an implementation team. Therefore, after the project manager was selected, it was now her duty to select a team that would assist with the development process of the BSC, as per Bourne and Bourne's (2007) suggestion. Niven (2002:51) cited that for any team to successfully run and implement a project, the team members must be united towards the common vision of making sure the project comes to completion. Hence such team members should possess complementary skills, meaning that at KPPC, team members had to come from different departments so that they brought different skills. The quality assurance manager, in her role as the project manager, after consideration of personalities and individual skills, approached employees from the IT, HR, Finance and Production departments to offer them the opportunity of becoming team members. She also explained why the company wanted to implement a BSC and what the benefits would be to individual employees, departments and the company as a whole. She also explained the duties of team members. The employees who agreed to be in the implementing team were: 3 from production and 2 each from HR, finance and IT departments. Together with the project manager, the team consisted of 10 members.

6.4.6 Formulate and select the scorecard perspectives

Guided by steps 7, 8 and 9 from Figure 6.3 above, the project architect together with her implementation team, followed the guidance of Mackay (2004:23-24) to design the structure and perspectives that were going to be incorporated into KPPC's scorecard. The number of perspectives which were to be incorporated into the developed BSC was directed by the company strategies formulated in stage 1 above. At this stage, the project team reviewed the company and manufacturing strategies and decided which method of evaluation was going to be used for the different targets, goals and objectives that were set. However, the architect was aware at this stage that it was necessary to engage managers from different functional areas since they are responsible for motivating and leading employees to perform. All functional managers were therefore

called for a meeting in order to select relevant and important performance measures for the different BSC perspectives. After agreeing with managers on the types of measures and how these were going to be measured and evaluated, the project architect together with her team called senior and executive managers for a brief discussion of the progress thus far. Discussions of this briefing meeting are highlighted in stage 6.4.7 below.

6.4.7 Meeting with executive and senior managers

According to Pekkola (2013), one of the important duties of the scorecard architect (project manager), is to ensure that performance measures in the BSC are linked to the long term strategy of the company. To do this, the project manager as guided by Mackay (2004:22-28), prepared interview questions, which were then used by the implementation team. Project team members, in sets of two and all led by the project manager, conducted interviews with executive managers and senior managers from each level in the organisation to make sure that the scorecard to be developed would reflect all the strategies that had been formulated so that future conflict was avoided or minimised. During the interviews, team members started by giving the managers a brief overview of what the features of the developed BSC would be; an overview of formulated strategies; the targets, goals and objectives as set by executive management; the vision and mission of the company; and the expected timeframe for developing and implementing the proposed BSC. The vision, mission and strategy of the company are set out below:

The vision of KPPC is: To be the benchmark printing and packaging company for the pharmaceutical industry, giving each job a personal approach through the professionalism, integrity and teamwork of our human resources.

The mission of KPPC is: Our mission of being “The team behind the scene” is to provide cutting-edge quality and competitive pricing without compromising on service excellence. We are committed to ensuring the best eco-friendly products using the most

eco-friendly production equipment. Our lithography presses are alcohol free and all the inks we use are vegetable based.

During the interview sessions, the architect was documenting all the input and concerns of the executives and senior managers so that potential conflict could be identified and dealt with. After this meeting with senior and executive management, the final BSC was designed. The project team led by the quality assurance manager (architect) then held a meeting to cascade and communicate the company objectives as detailed in step 6.4.8 below.

6.4.8. Project management team workshop with functional managers and their subordinates

This meeting's purpose was to present and discuss the draft BSC, the proposed objectives and performance measures in order to get the views of employees on the proposed BSC. Since executive and senior managers already knew the formulated strategy, performance measures and objectives at this stage, they were not called to this meeting. Performance measures and evaluation criteria were also communicated to employees. As shown in Figure 6.3 above, this stage (steps 10 and 11) is meant to address a larger audience within the manufacturing company since it was important that every employee was made aware of the proposed system.

The meeting received very positive feedback from employees who, because of the way they had been engaged by the implementation team, felt involved and that they were a part of this process. Employees from all departments and levels committed to the success of the development and implementation of the BSC. After these two crucial meetings the architect with the help of her team combined all the findings so that the perspectives and their relevant objectives could be finalised.

Five perspectives were decided and agreed upon: the financial perspective; the customer perspective; the internal process perspective; and the learning and growth/people perspective and an addition to Kaplan and Norton's (1996) perspectives, the supplier perspective. The list of perspectives and their respective objectives is reflected in the strategy map for KPPC as shown below:

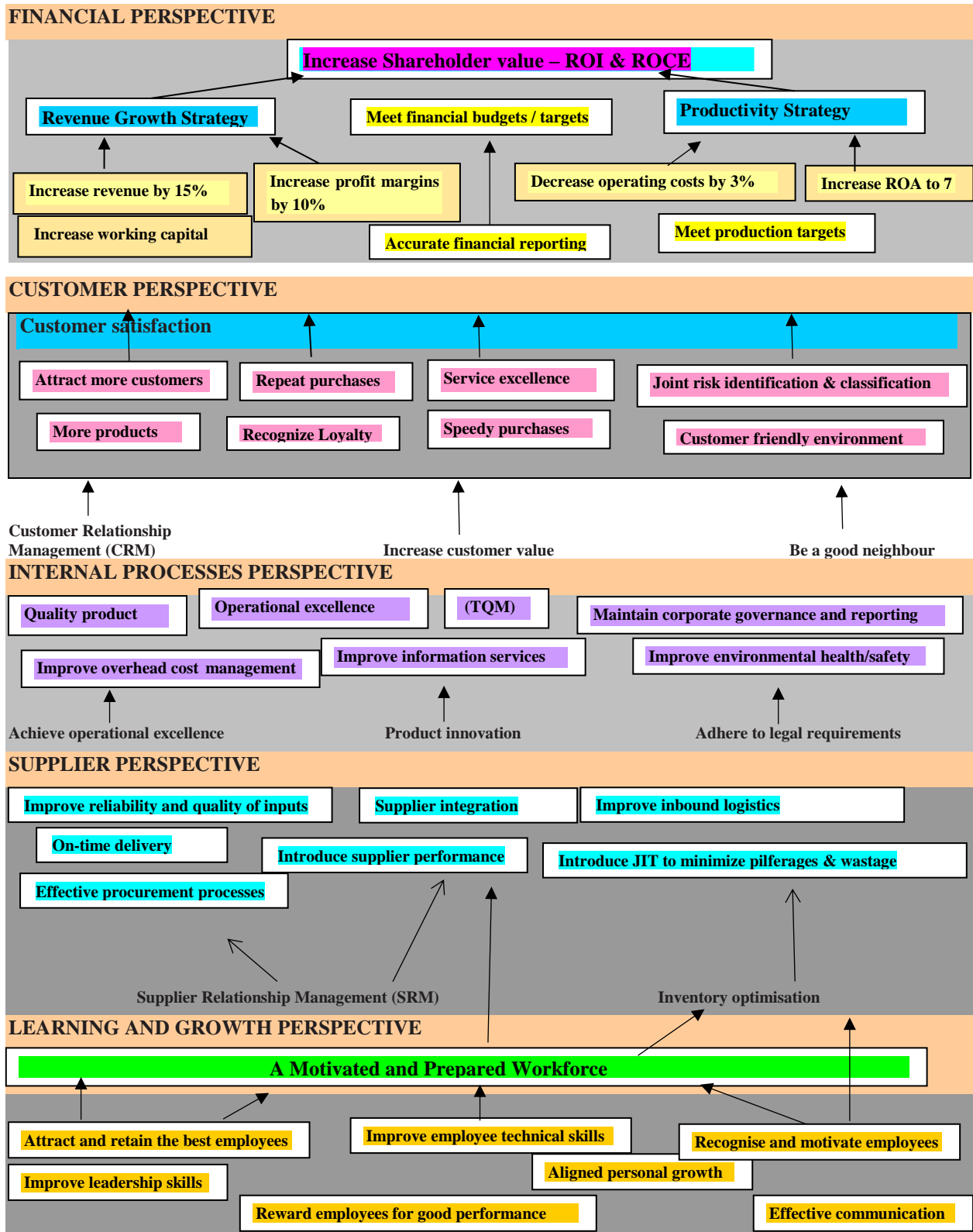


Figure 6.5: Strategy map for KPPC

Source: Author's own (based on KPPC's strategies and set objective)

6.4.9. Strategy mapping to link objectives to strategy

The architect followed the suggestion by Mackay (2004:28-29) that once strategy, performance measures, targets, goals and objectives have been formulated, agreed upon and set, the set objectives need to be linked to overall company strategy. This, according to Mackay (2004:28-29), will be possible for KPPC since their developed SPMMS, the BSC, is flexible in enabling companies to link their customised objectives to their formulated strategy. The architect and her implementation team also knew how important it was to recognise and maintain the associations between the objectives of each perspective with the objectives of other perspectives. This is also clearly shown in the strategy map for KPPC above where, for example, the objective to increase shareholder value in the financial perspective is achieved by revenue growth, which in turn is achieved by customer satisfaction in the customer perspective.

The project team, as advised by Mackay (2004:28-289), again had to work with senior and functional managers of KPPC at this stage so that senior managers would share their views and explain how the perspectives would be linked and which actions would drive certain outcomes. The strategy map in Figure 6.5 above was therefore created by linking the different perspectives in their order, depending on the linked objectives and drivers of performance. Explicit links were created to show associations between objectives, perspectives and outcomes.

Empirical findings from Bourne and Bourne's (2007:42) research revealed that only 5% of manufacturing companies worldwide have strategy maps in their organisations. However, as Bourne and Bourne (2007:42) also cited, the few manufacturing companies that manage to develop strategy maps like the one developed by KPPC above benefit from its practicality in communicating and explaining strategy and objectives to all employees. The fact that all employees are involved in creating the strategy map and hence the BSC means that everyone is united towards a common goal and resistance to change is minimised, making the implementation process easier (Bourne & Bourne, 2007:42).

In summary, the strategy map which was drawn up for KPPC in Figure 6.5 above shows that the company has two major manufacturing strategies: a) revenue growth, and b) improved productivity. The set targets were: a) to increase revenue by 15%; b) to increase the profit margin by 10%; c) to reduce operating costs by 3%; and d) to increase return on assets (ROA) to 7. The key drivers of better financial performance were good quality products, excellent customer service, investment in TQM, improved operational services and speedy purchases, which led to customer satisfaction, resulting in repeat purchases and more customers purchasing KPPC's products.

However, as already discussed in the literature review and as shown in the findings from this study, suppliers are very important to the manufacturing sector. As shown on the strategy map above, a good quality product is driven by reliability and the quality of the raw materials (inputs) and effective procurement processes, while service excellence in the customer perspective is driven by supplier integration into the supplier perspective. The activities and changes illustrated in Figure 6.5 could not be achieved without a motivated and prepared workforce that can assist the organisation in minimising inventory wastage, assist the organisation in adhering to legal requirements, create a customer friendly environment, innovate new products and meet production targets.

6.5. Summary

The first section of this chapter developed a procedural framework and highlighted the performance dimensions that manufacturing networks should employ. The definition of performance dimensions for manufacturing companies divided stakeholders into two groups: a) those providing input (employees and suppliers) and b) those evaluating output (investors and customers). Furthermore, the first section re-evaluated several requirements of SPMMS for manufacturing organisations as defined by different authors and as stated in Chapter 3. The second section highlighted and discussed eight stages that are involved in the development of a SPMMS, based on the procedural framework by Bititci et al. (2012:305-327). These included the manufacturing strategy formulation

to the construction of a strategy map. The last three stages of the procedural framework, as shown in Figure 6.3, do not form part of the development stage of the SPMMS and will therefore be discussed in Chapter 7 when the applicability of the BSC will be tested. The development stage of the SPMMS revealed the important features of a BSC which makes it stand out from other SPMMSs, as discussed in Chapter 3. This is its flexibility. This makes it possible to tailor-make a BSC to any manufacturing company based on the specific requirements and objectives of that particular company. The developed BSC can therefore be generalised and developed for manufacturing companies in KZN. It therefore meets the second objective of this study.

After the design and development stage, the BSC can now be implemented.

The following chapter will mainly consist of three stages: a) data gathering and analysis, b) presentation and communication of results and then c) review and evaluation. The applicability and validity of the developed BSC will also be tested in Chapter 7.

CHAPTER 7

TESTING THE VALIDITY AND APPLICABILITY OF THE DEVELOPED SPMMS

7.1. Introduction

In Chapter 6, a SPMMS in the form of a balanced scorecard was developed based on the vision, strategy, objectives, targets, metrics and action plans of a case company, KPPC. The procedural framework was defined; performance dimensions and stakeholders for manufacturing organisations were identified; and a step-by-step process to develop a SPMMS for manufacturing networks was discussed in detail. This chapter's aim is to validate the applicability of the BSC that was developed for KPPC and other manufacturing networks or single companies. To do so, the same case company (KPPC), whose strategy map was used to develop the BSC in Chapter 6 will be used to test the applicability of the BSC.

7.2 Findings from qualitative data

As stated in the methodology chapter, qualitative data was collected using interviews, observations and focus group meetings. The KZN Printing and Packaging Company (KPPC) is a South African, privately-owned company that is one of the biggest printers and packagers for pharmaceutical companies in the country. The company is fifty-six years old. It only had twelve employees when it started but now has grown to a staff compliment of over four hundred employees.

7.2.1 Manufacturing Networks

KPPC’s activities are not dispersed as the company only has a single manufacturing site based in KZN, South Africa. However, the company is looking into opening two more sites in the country so that each site focuses on the production of one main product. According to the CEO, the company is also planning on selective geographical expansion by only expanding to those countries where it already has existing customers, like Zimbabwe, Malawi and Botswana. A vast 80 % of KPPC’s revenue is made from its top 20 customers.

7.2.2 Production process

The main products for KPPC are cartons, leaflets, labels and stickers. The company’s products are primarily for pharmaceutical companies. Paper, board, die-cutters, ultra violet varnish and different types of ink are the major raw materials required for the production process.

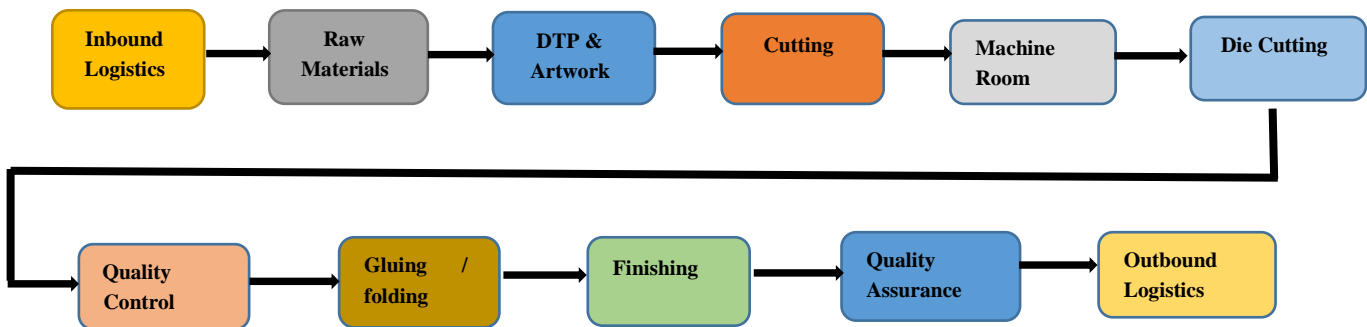


Figure 7.1: Production process of KPPC
Source: KPPC Standard Operating Procedures Manual

KPPC’s production process starts in the DTP (Desktop Publication) department where artwork is done. They have desktop publishers, graphic designers, DTP operators and proof-readers in that department to handle artwork as per customer

requirements. From DTP, information is sent to the cutting department and then sent to production. The machine room department is a huge sub-unit of the main company, with three hundred and nine machines, each being operated by one machine minder and an assistant minder. Some of the biggest machines in the factory each occupy between fourteen and eighteen square meters of the floor area. From the machine room, jobs are sent to the next department for die-cutting. There is a quality control department that checks jobs for errors before they are sent to the gluing or folding departments, depending on whether the jobs are cartons (which need gluing) or leaflets and labels (which need folding). The finishing department does varnishing; foil block or embossing of jobs, also depending on customer requirements. Before dispatching any jobs, there is a quality assurance department again to check for the quality of the jobs and colour deviations. This shows how KPPC values customer satisfaction by making sure all jobs being sent out are of the highest quality. Having a quality check like this also reduces the risk and expense of having jobs being rejected and sent back by customers.

7.2.3 Manufacturing Strategy

As discussed in Chapter 6, KPPC has developed a mission statement, which is: *to be the number one printing and packaging company in South Africa*. The manufacturing strategy for KPPC is directly derived from that mission.

Currently, the main stakeholders have placed the following demands on the production of KPPC:

Investors: KPPC has been a family-owned business since it was founded 56 years ago. The owners now want the company to increase revenue and market share. The company also wants its internal business processes to be run more efficiently. These targets set by investors will be met by investing in more current technology and software (for example, the proposed CRM, SRM, JIT and TQM software) and also in being more efficient and minimising and managing production costs.

Customers: The business is not as dominant as it used to be as two medium-sized packaging companies in the country merged their businesses in 2016 to form one larger company, which causes huge competition for KPPC. KPPC is also introducing a new product: cosmetic cartons, because many customers who manufacture beauty products have been requesting these packaging cartons for their beauty products.

Communities and Regulators: In South Africa, packaging for pharmaceutical companies is highly regulated. Without approval and certifications from FSC (Forestry Stewardship Council), which is a new requirement, KPPC cannot print any jobs for customers. KPPC also needs to abide by the rules and operating standards of governing bodies like the Printing Industries Federation of South Africa (PIFSA). Additionally, the printing and packaging sector is highly unionized and companies need to comply with statutory councils in the industry, such as the Printing, Newspaper and Packaging Industries (PNPI). The company therefore needs to put in place measures to meet the requirements of these regulators.

Employees: The company scored very low on employee measures of performance measurement during the survey. Employees are going to perform a vital role in assisting the company to meet and adhere to the requirements of the government regulators, as shown on the strategy map in Chapter 6. The company is also in the process of recruiting a new supply chain manager to lead the implementation of new technological software (JIT, TQM and SRM). The company wants to implement the new software by the start of the new financial year, July 2020. The company incorporated employee measures on its developed SPMMS in order to train, develop and motivate its workforce to perform better. This is going to be more important since the company is introducing new software.

Suppliers: KPPC wants to introduce SRM so that it can monitor its supplier performance and improve its supply chain management. Performance measures in the new supplier perspectives will be communicated to all suppliers who will have to adhere to those measures. KPPC also imports 70% of its raw materials from outside the

country, which further justifies why supplier integration was perceived as an important perspective of the developed SPMMS.

7.2.4 Developing and implementing a SPMMS

Results from the qualitative data collected during survey interviews also showed that some of KPPC's performance measures were not aligned to company strategy. An integrated SPMMS was therefore designed and developed in the previous chapter with measures, goals and objectives that were well defined in their relevant interconnected perspectives. These are going to be implemented throughout the company.

The KPPC will also continuously develop and improve its manufacturing strategy. Historically, the company was using financially-based measures and a few non-financial measures but is now developing an integrated SPMS with goals and objectives that are linked to the long-term strategy, vision and mission of the firm. The company's strategic objectives, as discussed in interviews and in focus groups and as shown on the strategy map that was formulated during the development of the BSC in Chapter 6, can be summarised as follows:

- Guarantee the satisfaction of customers
- Identify and develop the supply chain
- Increase shareholder value
- Increase revenue
- Increase profit margins
- Achieve operational and service excellence
- Attract more customers
- Maintain and improve corporate governance and reporting
- Improve environmental health and safety and
- Meet financial and production targets.

The strategic objectives for KPPC will be resolved by improving the following drivers of organisational performance:

- Improve overhead cost management

- Improve working capital management
- Introduce SRM
- Introduce CRM
- Minimise pilferages and wastage
- Improve reliability and quality of inputs
- Attract and retain the best skills
- Improve employee technical skills and
- Reward and motivate employees.

The case for KPPC has demonstrated how a company can define its manufacturing strategy by using a SWOT analysis, which was discussed in detail in Chapter 2. KPPC is one of the companies that had increased growth in working capital, which means it can use this strength, availability of capital, to invest in SRM, TQM, JIT and CRM and to train and develop employees to perform better. This case also illustrated how the SWOT analysis discussed in Chapter 2 can be used to define manufacturing strategy. From the SWOT analysis, the company managed to gather its internal strengths (availability of capital), weaknesses (lack of skills) and its external threats (new government regulations. In this case, the new requirement of FSP certification) to define who its important stakeholders are and use these stakeholder demands to formulate and develop a manufacturing strategy. This case also showed the causality of the perspectives and the objectives and how stakeholder satisfaction in each perspective is reliant on meeting the goals and objectives of the other perspectives. By meeting the set strategic objectives, the company has fulfilled its strategy and the manufacturing company is said to be operating on a strategic level (Pekkola, 2013).

7.3. Applying / implementing the developed BSC

From the strategy map that was formulated for KPPC in the previous chapter, the developed balanced scorecard is now summarised below (Figure 7.1). As stated earlier, the employee and supplier perspectives are regarded as input stakeholders while customers and investors form the output evaluating stakeholders. The

financial perspective, as shown on the strategy map, is placed at the top of the scorecard since its results are driven by all the other perspectives from bottom to top. The internal business processes perspectives is at the center of the strategy map as it feeds from the input stakeholders (employee and supplier) while itself driving the customer and in turn, the financial perspective. In each perspective of the developed BSC below, the main measures for that particular perspective are shown. These were obtained from the objectives that were set by the company as shown in the strategy map in Figure 6.5.

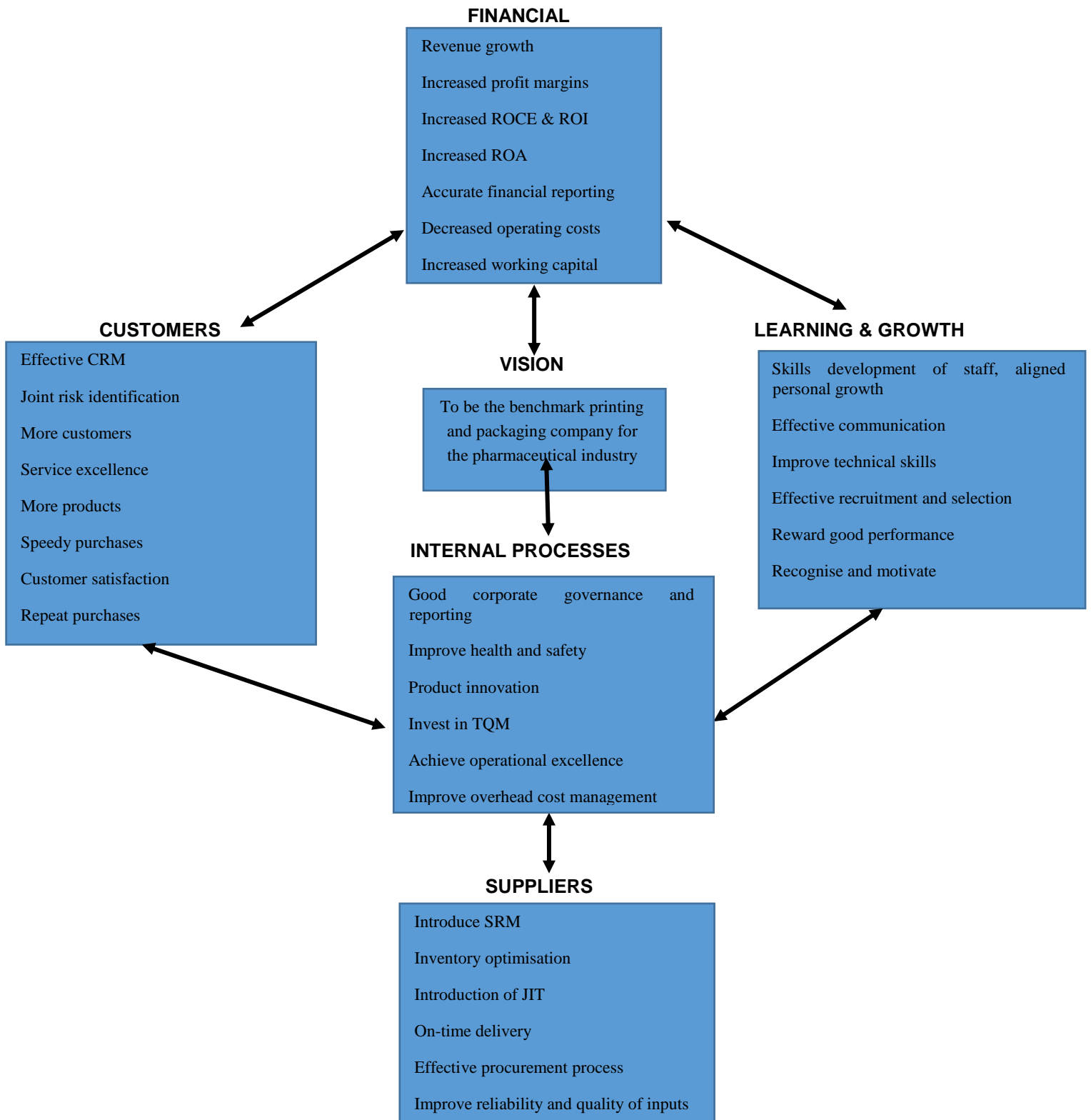


Figure 7.2: The developed BSC

Source: Kaplan and Norton (1996). Extended from the strategy map of KPPC

The five perspectives in the developed BSC above have cause-effect associations, as shown by the arrows connecting them.

As guided by Kaplan and Norton (2008), the following steps are important when implementing the developed BSC:

7.3.1 Creation of record sheets for data gathering and analysis

As stated by Kaplan and Norton (2008), a record sheet must be created for each of the five perspectives of the developed BSC. In the case of KPPC, the developed BSC had five perspectives: financial, customer, supplier, internal processes and learning and growth (people). The record sheets were created for the performance data gathering stage (step 12) as shown in the procedural framework (Figure 6.3) in Chapter 6. Data from different manufacturing sites/ business units or, in the case of KPPC, different departments is gathered and formatted so that it is compared to set targets. The specific methods of data collection are detailed in the record sheets below. These record sheets would have the following information:

- What objective is to be measured?
- The reason why the objective and performance measure were set;
- The specific target to be achieved. For example, 15% revenue growth;
- How the result is calculated so that it can be compared to actual targets?
- How often the objective will be measured?
- Who is responsible for the measurement?
- Documentation to prove the measured results;
- Who are the results intended for?
- Required action after getting results.

The architect (project manager) together with the executive managers at KPPC decided to start by gathering data for two perspectives so that after implementation,

it would be easier to ascertain how well targets had been met in those two, then move on to the other perspectives later. The two perspectives they started with were the financial and employee / growth perspectives. The record sheets for these two perspectives are shown in Tables 7.1 and 7.2 below.

Table 7.1: KPPC Performance measure record sheet: financial perspective

Performance measure	Performance & productivity targets	Shrinkage managed	Financial results	Return on capital employed (ROCE)	Employee incentive programmes
Purpose	Performance & production targets must be achieved in order to meet financial budget / targets	The reduction of waste and the responsible use of consumables leads to cost reductions	To analyse the financial results of the company.	To track and ascertain whether interventions and investments into improvements yielded desirable results i.e. that a benefit in excess of the invested resource was obtained, e.g dividend payouts	Rewarding and incentivising sustained exceptional performance through performance bonuses and profit share
Relate to (objective)	Meet parameters on which the financial budget is based.	Cost reductions/savings	Increase shareholder value, cost reduction and profit margin increase.	Return on investment-capital and other resource investments	Reducing costs and maximising resources and subsequently the increase of profit

<p>Target</p>	<p>Productivity: produce at maximum capacity per machine, Accuracy: reduce errors to below 0.2%; time: 96% on time delivery to customer</p>	<p>Compare current wastage figures with history.</p>	<p>15% increase in revenue; overhead costs should be reduced from previous financial period by 3%, profit margin of 10% is required, ROA to increase to 7</p>	<p>Timeframes will be agreed with the customer as the intervention is agreed. The desired result will always be to make a saving or achieve a performance improvement that yields a saving, in excess of what was invested.</p>	<p>Process compliance, attendance, improvements: reduce consumables, increased productivity, improved accuracy, and reduced wastage and inventory damages. Reduced customer rejections and complaints.</p>
<p>Formula</p>	<p>Productivity: total units processed for the day/total machine capacity; Accuracy: total errors/total units processed; Time: late deliveries/total deliveries</p>	<p>Reduction in aggregate wastage and consumables.</p>	<p>% increase in revenue = (current month - previous month)/previous month. Cost reduction - previous month costs less current month costs. Budgeted figures vs. actual figures and the calculated difference is displayed on management accounts. Profit margin = net profit/revenue compared month on month to see increase or decrease</p>	<p>Resource and capital investment < Yielded capital saving and/or performance improvement.</p>	<p>Performance targets as set out must be met. Process compliance and attendance must be at least 97%. Over and above this, there must be a sustained improvement over the period in consumable usage, productivity, accuracy, wastage and damages. A saving must be realised in which the staff will share 25% as an incentive.</p>

<p>Frequency</p>	<p>All three performance tiers must be measured and reviewed on a daily basis as well as being tracked progressively and with running total averages</p>	<p>This is measured and reviewed on a monthly basis. It should be compared month on month and according to financial periods.</p>	<p>Measured monthly; reviewed annually.</p>	<p>Interventions will be sanctioned as required. Thus the measurement will only occur during and directly after the intervention.</p>	<p>Performance based bonuses will be paid out annually each year-end if profits and savings surpass the previous financial period. For the purposes of this scorecard, there must be evidence that results are tracked and communicated, and that action plans are documented to keep the operational team on track.</p>
<p>Manager responsible for measuring</p>	<p>Operations manager</p>	<p>Operations manager</p>	<p>Finance manager.</p>	<p>The selected champion and her team will be responsible for recording and tracking results and reporting on these until a permanent internal audit team is selected.</p>	<p>Operations and sales managers by means of this scorecard.</p>
<p>Evidence/ supporting documents</p>	<p>All source data will be obtained and 3 separate reports will be completed: Individual productivity, Individual accuracy and the on-time delivery reports</p>	<p>The source of the data will be the financial records of all consumables purchased, and for wastage it will be all errors found and reported in operation and production departments. A consolidated wastage report that averages the departmental wastages for each</p>	<p>Monthly management accounts.</p>	<p>Measurement during and directly after the intervention/investment is of critical importance and as such must be fully documented and verifiable.</p>	<p>This scorecard as well as cascaded scorecards of departments and process owners, and supporting documentation stipulated in these scorecards.</p>

		source for each day. Consumables will be tracked as an aggregate number for each type.			
Who acts on the data?	Heads of departments	Heads of departments	Procurement manager and operations manager.	The nominated internal audit team	Senior departmental managers, process owners and individual staff members.
Action to be taken	Non-performances must be addressed by counseling, retraining, re-assessment and if it persists with disciplinary action that can progressively lead to dismissal. Records must be kept and be accessible for each instance	Sources of wastage must be known and the most prominent source must be focused on and addressed with documented action plans and results yielded. Consumable usage must be tracked down to an individual level, cascading down from which manager signs for it to which individual used it. Excessive users must be addressed.		Depending on the intervention, specific action plans will be developed and implemented to reproduce desirable results or mitigate undesirable results. It is critical to document which actions yielded which results for this purpose.	Visually track their compliance and improvements, and where there is a lack, implement actions to get back in line. Motivation must be kept high during the period to achieve the end goal of an incentive reward.

<p>Pre-assessment measure</p>	<p>Performance is calculated by using a zero base, with evidence of continuous improvement. Performance figures are presented year-to-date on a month-to-month basis. A schedule is available on how budgeted performance is calculated and the schedule is understood at department level and signed off by each manager. It is also clearly communicated at staff level. Performance measures and actual achievement is known by all managers and is shared and managed daily</p>	<p>Wastage figures and consumables are considered a joint responsibility. They are measured accurately, managed and continuously reduced.</p> <p>A list is prepared of all possible sources of wastage with acceptable loss targets, within customer specifications (e.g. system adjustments, stock accuracy, damages and all stock losses).</p> <p>Areas where consumables can be reduced are identified and clearly understood. Action plans are in place and monitored for results yielded. All managers demonstrate clear understanding of areas where savings can be achieved in consumable usage and for causes of shrinkage as per defined category.</p> <p>Can account for losses and can show evidence of communication with</p>	<p>Increase in revenue Reduction in costs Adherence to budgets Profit-margin increase realised Adherence to all budgets, reduction in operating costs Exceeding budget requirements Revenue increased Profit is increased due to the previous points being met or due to better performance.</p>	<p>A set methodology to follow is agreed upon. Previous data and trends on which to improve are available and verifiable. Action plans are agreed upon and tabled with timeframes. Verifiable results with an improvement in performance or increase in profit is realised.</p> <p>A set methodology for process improvement interventions is documented and agreed upon. The process or function to be improved is relevant and agreed upon.</p> <p>Historical data and trends are available and verifiable to gauge any yielded improvements.</p> <p>Action plans with timeframes are set and agreed. The cost of the resources employed is calculated. Results are tracked and verifiable for any and all improvements and/or failures.</p> <p>A performance increase or cost reductions or profit increase was yielded in excess of the resources deployed to attain them, i.e. a return was realised on the investment.</p>	<p>To improve productivity and reduce selected variable expenses, thereby creating opportunities to reward employees for consistently exceeding expectations against performance and service standards</p> <p>Improvements to achieve: Reduce consumables, increased productivity, accuracy, wastage and damages</p> <p>Qualifying pre-requisites and improvements to achieve are clearly documented, communicated displayed and understood by all levels of management and staff. All qualifying pre-requisites and improvements to achieve data are recorded and tracked on a daily basis and clearly displayed to all levels of management and staff. Stakeholders must understand their current and running achievement in this regard and whether they qualify or not and, if not, what the action plans are to rectify this. Action plans per category with timeframes are set and agreed upon. Results are tracked and verifiable. Results are clearly communicated and displayed</p> <p>Identify those action plans that yielded improved results that must be sustained. Also identify actions that disqualify the team as per the incentive scheme and that must be avoided. These action plans must ensure that the team qualifies for the scheme payout.</p>
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		<p>employees.</p> <p>Losses are analysed per category and there is evidence of review.</p> <p>Corrective and preventative action is presented.</p> <p>There is a reduction in the number of incidents per category.</p> <p>A sustained improvement over the period in recorded losses exceeding a reduction of 5% of acceptable losses as an aggregate</p>			
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Table 7.2: KPPC Performance measure record sheet: Learning and growth perspective

Performance measure	Integrated performance	Employee relations managed effectively - committee structure	Staff selection & screening	Absenteeism and sick leave management	Staff wellbeing and management	Skills development, succession planning and multi-skilling
Purpose	<p>Performance can only be achieved through measurement of key performance areas (KPA's) and key performance indicators (KPI's) aligned to business objectives. Thus the goal is to identify inadequate performance to develop the</p>	<p>Work stoppage or industrial actions are usually the symptom of bad communication between management and staff. The most common reasons for an illegal strike to occur is the lack of understanding by employees due to the lack of clear communication from and to management. Through these interventions and a dedicated approach to open and clear communication with employees, all issues are addressed before any undue animosity or wrong perceptions can lead to unnecessary</p>	<p>To recognise the benefits of standardised recruitment practices, promote career planning and ensure objectivity and consistency is exercised throughout the process.</p> <p>KPPC is committed to recruiting the best possible candidates going forward; therefore a minimum requirement of matric certificate is required for all junior positions and a minimum of a diploma for all senior positions</p>	<p>Must be measured and managed to ensure compliance to the set target.</p>	<p>Employees are the backbone of KPPC and as such are the key to our competitive advantage.</p> <p>Their wellbeing and morale is our top priority.</p>	<p>By multi-skilling our staff pool, we ensure that there is always the required skill to perform an operational function.</p> <p>This also allows us to rapidly adjust in ad hoc situations. Progression also serves as a motivational tool to staff and increases the retention of our skills.</p>

	employee and improve the result.	actions				
Relate to (Objective)	Building performance-driven teams that adhere to and aim to exceed our standard operating procedures that are linked to high-level objectives.	Cultivating exceptional human resource management and mitigate industrial action	Good human resource management and create an open platform for dialogue	The reward-and-incentive scheme.	Good human resource management and create an open platform for dialogue	Good human resource management and create an open platform for dialogue
Target	Achievement of KPA and KPI targets that were set out and linked to business objectives in accordance with the strategy.	No industrial action or work stoppage due to employee and employer issues. Committee meetings held monthly.	Employment to be done in accordance with the recruitment and selection policy. Specific departmental job profiles must be adhered to	98% present rating per individual.	An average score of above 4	100% of employees should be multi-skilled.
Formula	Various formulae will exist for each KPA and KPI. It is critical that it be documented, communicated	Number (quantity) of industrial actions or work stoppages over one year,	Number of employees failing the training session because of inadequate capabilities-calculated as a %	Total days absent/total days scheduled to work.	A survey is constructed and all questions on the survey are scored from 1 - 5: Never/sometimes/often /mostly, and always. This consolidates into sections and into a total	Number of multi-skilled employees calculated as a % of total staff complement in the company. This is also an indication of the % skills training and development still to be done on the current staff complement.

	and understood, as well as be readily available.	three years, five years in the organization as a % of the total number of work stoppages in the rest of the industry	of the total number of new employees recruited during the specific period.		employee barometer score.	
Frequency	Various frequencies will exist for each KPA and KPI. It is critical that it is documented, communicated and understood as well as readily available.	Monthly meetings must be held and documented with the elected staff representative committee, management, the procurement manager and the HR manager	Calculated every time new employees are recruited.	Recorded and addressed daily and tracked progressively.	A department per month must be surveyed.	Continuous process. All current employees should be trained and multi-skilled, and any new employee appointed should immediately multi-skilled.
Who measures?	Top management	Top	Operations	Operations	Employee committee with	Top management and

		management and selected employee committee	manager and HR recruitment and development department	manager	the operations manager.	HR recruitment & development department.
Evidence/ supporting documents	Various supporting documents and linking scorecards and dashboards will exist for KPAs and KPIs. A strategy map that displays these links must be available.	Selection criteria of the representative staff committee. Mandate to the committee. Schedule for regular meetings. Documented and filed meeting minutes. Documented action plans for addressing issues. Employee barometers and graphs.	Staff selection and recruitment policy. Specific departmental job profiles Records of staff retention of skills. Records of staff turnover. Records of new all recruited employee pass rates after training and assessment	Daily individual absenteeism report.	Employee barometer and documented action plans for the low-scoring sections and topics.	Progression model specific to the company. Documented multi-skilling policy. Staff turn-over reduction and retention policy.
Who acts on the data?	All linked to cascading managers as per the strategy map.	Staff representative committee and dedicated persons as per the minutes	Senior management HR recruitment and development department	Heads of departments	Employee committee with the operations manager.	Operations manager and departmental heads
What do they do?	Mentoring and coaching to develop managers. Training to develop	Mandate to committee: They must serve as	Documented employee	Absenteeism and sick leave abuse must be addressed	A documented orientation procedure is available. Employee barometer	Schedules are available, detailing the training and assessment requests made for all newly appointed

	<p>employees. These must be formalised and documented. Specific outcomes with timeframes and assessments for improvement must be in evidence.</p>	<p>a platform for clear and factual communication of all staff and operational wellbeing issues, based on understanding and collaboration</p>	<p>selection policy is available. Minimum requirements are stipulated. Evidence to support the following for all new employees: * Basic-skills screening test * Completion of criminal and credit reference checks * Interview process Verify all newly appointed employees within the audit period: - a signed contract & complete employee file. Evidence of reviewed documents are available</p>	<p>By counselling and, if it persists, by means of disciplinary action that can progressively lead to dismissal. Records must be kept and be accessible for each instance</p>	<p>completed and action to address areas of concern is available. Potential risks are highlighted in the results are incorporated into risk management Development and advancement of employees Evidence of effective employee relations management Evidence of resolution of concerns raised Evidence is provided to support best practice in terms of processes followed to support employee well-being. The process will need to exceed standard requirements</p>	<p>employees within the period. Documentary evidence is available, indicating that all newly appointed employees within the audit period had been trained and assessed prior to being included as part of the staffing pool. Evidence of review of staffing pool is available. Schedules confirming training and assessment of employees are available. Evidence of review of competence gaps is available</p>
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7.3.2 Data analysis and recording

After using the record sheets above to gather data, Bititci et al. (2012:305-327) suggested that the data must be analysed (step 13 of Figure 6.3). The aim of the data analysis at this stage is to establish which targets were met and determine why some targets and objectives in the manufacturing strategy were not met. An audit document was also created where a score would be recorded for each objective after analysis of data and the total number of scores would be compared to the actual weighted score in the perspective. This is shown in Table 7.3 below. However, there are no scores in the audit document for KPPC as this document was only designed to show how the company would record the results of their performance measurement at a later stage when the developed BSC would have been implemented throughout the company.

7.3.3 Communication of performance results

As already stated by Pekkola (2013), in the literature review chapter communicating performance results throughout the organisation (Figure 6.3, step 14) is vital for the following purposes: a) employees can be informed about the performance of different sites (in the case of a manufacturing network) or departments (in the case of single sites) on achieving set targets and objectives, b) to communicate and give feedback on individual employees' performance and c) to give all employees feedback on the performance of the company as a whole.

7.3.4 Evaluation of SPMMS

The final stage in testing the applicability of the developed SPMMS (step 15) is to review and evaluate the BSC. Results from the evaluation are used to identify areas where the developed BSC was successful as a strategic PMS and also the areas that need improvement on the SPMMS. The results of this evaluation are also used as a starting point to define future manufacturing strategy. Strategies that worked will be

maintained, while those that did not work will be changed, improved or discarded and re-formulated; training needs are identified; new targets and objectives are set and added to the strategy map. After (re)formulation of strategies comes implementation again, and the process starts again from the beginning. Hence performance measurement and management are continuous processes.

Table 7.3: Template for summary of scores for KPPC

KPPC : Summary of scores					
Company name		Scores			
KZN Printing & Packaging Company					
Operating Durban - in KwaZulu-Natal		Date			
		Potential score	Actual Score	Weight	Weighted Actual score
People/learning and growth					
1	Effective communication managed	5		15	0
2	Employee relations managed effectively - committee structure	5		15	0
3	Staff selection & screening	5		20	0
4	Absenteeism and sick leave abuse management	5		15	0
5	Staff wellbeing, motivation and management	5		15	0
6	Skills development of staff - progression and multi-skilling	5		20	0
Total score out of 100 for People					0.0
Financial					
1	Performance achieved	5		20	0
2	Shrinkage managed, including consumables	5		15	0
3	Production targets met	5		15	0
4	Financial results – revenue increase, profit margin increase	5		20	0
5	Return on investments (ROI) and process interventions achieved	5		15	0
6	Incentive programmes implemented	5		15	0
Total score out of 100 for Finance					0.0
Customer/stakeholder					
1	Customer relationship management (CRM) implemented	5		25	0
2	Joint risk Identification	5		10	0

3	More products	5		20	0
4	More customers achieved	5		20	0
5	Customer service excellence	5		25	0
Total score out of 100 for <u>Customer</u>				0.0	
Internal processes					
1	Sound business contracts and relationship-management with customer	5		25	0
2	Process adherence & conformance; management; and retention of documents	5		15	0
3	Overall general management and corporate governance and reporting	5		10	0
4	New product innovation	5		10	0
5	Investment in TQM	5		25	0
6	Environmental health safety and general discipline	5		25	0
Total score out of 100 for <u>Operations</u>				0.0	
Supplier					
1	Sound business contracts with supplier	5		15	0
2	Supplier relationship management (SRM)	5		25	
3	Investment in JIT	5		15	0
4	Inventory optimization	5		15	
4	Supplier performance scorecard	5		15	0
5	Logistics management – on-time-deliveries	5		20	0
Total score out of 100 for <u>Supplier</u>				0.0	
Final overall score				0.0	

Source: Author's own

7.4 Outcomes of developing and implementing the BSC

According to Kaplan and Norton (2008), the design, development and implementation of the BSC have a number of positive outcomes for the organisation, as follows:

➤ **Motivation**

During the development stage of the BSC for KPPC, the project manager and her team held a workshop for functional managers and the rest of the employees in order to communicate company strategy, vision, goals and objectives. The purpose of the workshop was also to get the views of the employees on the proposed BSC and its performance measures. Since all employees were involved, they felt they were part of the organisation and having specific goals and objectives would give them direction and knowledge of what exactly was expected from them in order to achieve company goals. As further motivation to employees, KPPC introduced incentives in the form of performance bonuses and profit-share for goal achievement as performance drivers in the employee growth and development perspective.

➤ **Improved communication**

Lawrence (2009: 47-56) cited in his study that, in most cases, any organisation wanting to change any system fails to succeed in such efforts if it does not clearly communicate the proposed changes. Besides holding a workshop to communicate goals and objectives, the developed BSC of KPPC incorporated effective communication with employees as an objective in its employee / growth perspective. As recommended by Niven (2002:69), every employee in KPPC from top to bottom was made aware of their individual objectives and targets (who); the metrics to be used and how they were going to be measured (what); timeframes for BSC implementation and performance measurement (when); each department was made aware of its targets (where); and the reason for developing a new SPMMS (BSC) was communicated to each employee (why). Objectives and strategy were also communicated graphically through the strategy map.

➤ **Change management**

Lawrence (2009: 47-56) postulated that people are usually scared of change as it brings uncertainties. Resistance to change, according to Lawrence (2009:47-56), usually occurs if: a) employees do not understand the reason for the change, b) employees are not consulted about the change, c) change is not clearly communicated and d) if the

proposed change negatively impacts their current benefits and rewards. The BSC project team was aware of the possibility of resistance to change, so they prepared for that and managed it by making every employee from top to bottom participate during the workshop, give their views and contribute to the change themselves. The employee / growth perspective of the developed BSC has company objectives which included employee training and development and the rewarding of employees for meeting goals and objectives. This meant that employees were being equipped for success. Rewarding employees for meeting goals motivates them to work harder and be recognised for achievements.

As mentioned by Muogbo (2013:24-32), strategic performance measurement and management is not a once-off activity but a continuous process. KPPC's strategies therefore have to be formulated, implemented, evaluated and (re) formulated whenever the need arises and in line with the successes of the strategy map of the organisation.

7.5. Findings from the case study

In Chapter 3, the main guidelines for performance measures were summarised as follows:

- Performance measures must emanate from formulated strategy;
- Measures need to relate to determined goals and objectives;
- Measures must be defined communicated to employees clearly;
- Performance measures must be specific and measurable;
- Measures have to be explicit about what exactly is being measured;
- Performance measures must be presented in a visual and easy to understand format; and
- Performance measures need to be balanced (financial and non-financial).

Gimbert et al. (2010:477-497) further cited the following features of SPMMs:

- They integrate multiple perspectives;
- Perspectives are linked and have cause-effect relationships;
- Each perspectives has its own specific measures, goals and objectives;

- They are linked to the long-term corporate strategy; and
- They are linked to the company's vision and mission

All the above guidelines and features were incorporated into the developed BSC by deriving goals and objectives from the strategy and vision of KPPC. Every employee can see the goals and objectives of the company on the visual strategy map. The developed BSC does not incorporate only the financial perspective but also non-financial perspectives in the form of customer, supplier, internal business processes and the employee (learning and growth) perspectives. The formulated strategy map for KPPC shows clear cause-effect associations between goals and performance measures as suggested in the requirements. The performance record sheets in this chapter, Tables 7.1 and 7.2 clearly show formulas for measures and how they are linked to and how they impact on employee remuneration and incentives.

All the important stakeholders for manufacturing companies discussed in the literature review (employees, investors, customers and suppliers) were incorporated into the developed BSC. This proves that the developed SPMMS is valid as a strategic performance measurement and management system for KPPC and other manufacturing companies. In order for other manufacturing companies to apply this SPMMS to their organisations, they need to design their own strategy maps based on their visions with objectives and measures that are linked to their long-term strategy. Most performance measures for manufacturing companies will be the same since they are within the same industry.

7.6. Summary

The performance dimensions and procedural framework defined in section 6.2 and section 6.3 revealed the steps that take place when designing and developing a SPMMS. The stakeholders for manufacturing companies were clearly identified. The guiding questions in Figure 6.2 assist managers in deriving explicit targets and measures by asking themselves: what exactly they want to achieve?: how they will

achieve it?: and for which stakeholders in particular?. However, a company does not have to use or address all performance dimensions at once: performance measures, goals, objectives and targets are company-specific and dependent on what a company wants to achieve at a given time. A SPMMS has to therefore have company specific goals that fit the customised manufacturing strategy. Moreover, not all manufacturing companies have manufacturing networks and multiple sites. Others only operate in single sites, like in the case company (KPPC). The aim of this chapter was to validate and apply the SPMMS that was developed in Chapter 6 to a company. Since the SPMMS fulfills both the requirements and guidelines of strategic performance measures and features of a SPMMS as highlighted in the literature review, the developed BSC is therefore preferable as a SPMMS for manufacturing companies and networks due to the fact that the same steps can be taken to develop one for a different company by only changing the manufacturing strategy, targets, goals and objectives to suit each individual company's requirements and needs. The chapter also proves the validity of the new contributions to SPMMSs that the researcher developed in this study. The following and last chapter of this study will give a brief summary of the conducted study, outline contributions of the study, give recommendations to manufacturing companies and highlight potential areas for further research.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

According to Micheli and Manzoni (2010:465-476), a well formulated strategy, if effectively implemented, gives a company a competitive advantage over its competitors as it directs and guides the company to fulfill its vision through the setting of goals and objectives. This leads to stakeholders from all perspectives being satisfied, resulting in improved organisational performance (Pekkola, 2013). The current study was conducted in order to research and examine the association between strategy, performance measurement systems and organisational performance within the manufacturing sector in KwaZulu-Natal. To do so, a survey was conducted to investigate the PMSs being used in the selected manufacturing organisations and identify the extent to which these organisations use the integrated performance measures in the form of SPMMSs.

Section 8.2 reviews the research questions that were formulated in Chapter 1 and the findings from the conducted research, while section 8.3 outlines the contributions of this study to existing theory and literature on performance measurement systems. Section 8.4 will illustrate the limitations of the research. The chapter also summarises the full study by reviewing the purpose and aim of the study, the research methods that were used, the results and findings of the study as well as what the researcher recommends for future research.

8.2 Purpose of the Study

The research problems stated in Chapter 1 identified the need for a more integrated PMS which incorporates financial and non-financial measures of performance. It was

also identified that this PMS had to be strategic in nature so that it could be used as a tool to communicate strategy and transform a company from just its vision status to achieved goals and objectives. Furthermore, as stated in Chapter 1, there was a problem in that previous studies had developed standard PMSs that would not cater for and were not appropriate for manufacturing networks or sites. The objectives of the research will be asked in question form as follows:

1. What types of PMSs are being used in the sampled manufacturing companies and to what extent do these PMSs incorporate financial and non-financial measures?

To give an answer to the question above, the researcher conducted a survey in the form of 6 point – Lickert scale questionnaires which were sent out to the ten sampled manufacturing companies. Results were analysed and presented in the form of a descriptive analysis in Chapter 5. Definitions of PMS and SPMMS derived from the literature review were provided to respondents on the questionnaire. It was noted from the results of the study that most organisations were not using SPMMSs, as shown by the 70% of respondents in Figure 5.6.1 who stated that they did not have SPMMSs in their companies. Moreover, 40% of the respondents (Figure 5.6.1) stated that they did not have any performance measurement systems at all, while 30% of the companies still focus on financial measures only as a way to measure performance, (Figure 5.6.2). The definition and guidelines of an integrated SPMMS from the literature review stated that SPMMSs should incorporate financial as well as non-financial measures. The performance measures should also be linked to the company's long-term strategy. This was not the case from the findings of the study, as shown by 40% of the respondents in Figure 5.4.4 who disagreed that their goals and objectives were linked to company strategy.

Findings from the research instrument concurred with the findings from literature the review and with a study conducted by Deloitte and Touche HCC (2009) on South African companies which concluded that 95% of the workforce in South Africa do not understand their companies' strategies; 70% of organisations' management incentives are not linked to company strategy; and only 37% of South African companies use

strategic performance measurement systems, while the majority of companies still use only financial performance measurements like gross profit; net profit and ratios, measurements which according to Taticchi et al. (2012b:593-614) are not integrated and fail to give strategic direction to the company and do not assist in achieving a competitive advantage. These results led to the secondary objective of developing a SPMMS for manufacturing companies based on the objectives that were stated in Chapter 1 as follows:

Can a BSC, as a reference (SPMMS) model for manufacturing organisations be used to test:

- The existence of a positive association between the use of SPMMSs and organisational performance?
- The indirect positive relationship between effective strategy (implementation and evaluation) and organisational performance through the incorporation of financial and non-financial measures?

From the results of the questionnaire that was administered to the ten sampled manufacturing companies in KwaZulu-Natal, a Spearman's correlation matrix was presented in Chapter 5.

Table 5.7.10 in Chapter 5 shows strong correlations between strategy (in the form of formulation, implementation, evaluation and re-formulation) and financial performance, as well as non-financial performance such as customer, internal business processes, employee and supplier performance. Table 5.7.11 also reveals correlations between the use of both financial and non-financial measures with overall organisational performance (all perspectives of the BSC). Therefore, it can be concluded that there is a direct positive relationship between a firm's strategy and the extent of the use of a SPMMS, like a BSC, which contains both financial and non-financial measures

This section therefore justifies the purpose of the study that was conducted and gave answers to all the research objectives that were raised in Chapter 1.

A SPMMS for manufacturing companies was developed by using the case study approach.

As stated in the literature review, there are guidelines for performance measures and specific features for a SPMMS. In Chapter 3, it was also stated that the manufacturing strategy for a company should be derived from its vision and mission. A strategy map, which clearly states company goals, objectives and targets, should then be constructed from the manufacturing strategy. These goals and objectives, according to Pekkola (2013), should be communicated throughout the organisation. The purpose of collecting qualitative data during the development of the SPMMS at KPPC was for the researcher to be able to verify if the guidelines for performance measures and specific features for a SPMMS were incorporated into the developed BSC by deriving goals and objectives from the strategy map. KPPC also defined its manufacturing strategy by using the demands that were placed on the company by its stakeholders (customers, employees, communities, regulators, investors and suppliers). Specific individual and departmental goals and objectives were set and communicated based on guidelines set out in Chapter 3. Record sheets were created to show targets against which the performance results were going to be rated and these were communicated throughout the organisation. The frequency of measure and the purpose of each set objective were also stated and communicated. The procedural framework, as set out by Bititci et al. (2012:305-327) in section 6.3, was followed by KPPC during the development of the SPMMS. Moreover, the company followed all the eight stages in developing a BSC as set out by Bititci et al. (2012:305-327), Mackay (2004), Niven (2002), Bourne and Bourne (2007) and Kaplan and Norton (1992 – 2008) in Chapter 6.

One can therefore conclude that the developed BSC fulfills the demands of a SPMMS for manufacturing enterprises, as well the most important guidelines for SPMMSs that were outlined and discussed in the literature review chapter. Managers can benefit from this SPMMS by using it to communicate and implement strategy, set goals and objectives for their organisations, for departments and individual employees. The tool can also be used to evaluate strategy and re-formulate those strategies that did not work. The developed SPMMS can also be used by management to reward employees and identify training needs and motivate those employees who do not meet their objectives (Pekkola, 2013).

8.3 Contributions to theory

The contributions to SPMMSSs for manufacturing organisations were identified in the case study as follows:

➤ **Incorporate all stakeholders' perspectives:**

The developed SPMMSS for the case company (KPPC) addressed all stakeholders, customers, employees and shareholders as performance perspectives, as suggested by Kaplan and Norton (1996) and as per the guidelines of SPMMSSs that were discussed in Chapter 3. From the results of the study that were discussed in Chapter 5, most of the sampled companies were focusing on financial performance (investors) and a few performance measures from the other perspectives, whilst completely ignoring one of the most important groups of stakeholders, the employees.

➤ **Linking manufacturing strategy with the SPMMSS:**

In the new SPMMSS developed by KPPC, the manufacturing strategy was successfully linked to the BSC. However, the results of the existing PMSs in Chapter 5 showed that most of the companies did not link strategy to their PMSs, as evidenced by five out of the ten companies in Figure 5.4.4 which were not linking their performance measures to long-term strategy while only 52% of the employees were even aware of their companies' strategies (Appendix H). The new SPMMSS developed therefore contributes to the manufacturing strategy formulation.

➤ **Addition of a fifth perspective to the BSC (Supplier Perspective)**

Findings from the literature review illustrated the importance of incorporating suppliers as a performance dimension in the SPMS because, as stated by Pekkola (2013), without good quality raw materials that are delivered on time, it becomes difficult to satisfy the customer and to increase profit margins. Incorporating supplier performance measures is expected to improve an organisation's performance through the improved quality of inputs (raw material), on-time delivery of inputs, reduced direct overheads

due to lower prices of inputs and reliability of supply (Frohlich and Westbrook, 2001:185-200)

Research done by Flynn et al. (2010:58-71) also found a positive relationship between an organisation's strategy, supplier integration and overall business performance through stakeholder satisfaction. Furthermore, in that study, the organisational performance construct was defined by profitability growth, income growth and an increase in market share. The positive impact of supplier integration on an organisation's financial performance was also supported by the results of the correlation matrix, as shown in Table 5.7.2 in Chapter 5. Supplier measures were found to be strongly correlated to the financial, customer and employee performance of the companies. It was therefore justifiable to add suppliers as a new perspective on the developed SPMMS.

8.4 Brief summary of the research

As stated in Chapter 1 and cited by previous scholars like Pekkola (2013) and Micheli and Manzoni (2010:465-476), the study of performance measurement is now inclined and directed towards a more strategic and integrated approach. The use of financial and non-financial performance measures is becoming more relevant and it has become vital for the SPMMS to be able to address all stakeholders: suppliers, customers, employees, shareholders and industry regulators (Pekkola, 2013).

This study was conducted in two stages: firstly: there was an investigation to find the types of PMSs being used in the sampled KwaZulu-Natal manufacturing companies and secondly to evaluate the degree of usage of financial and non-financial measures against organisational performance. Quantitative data was gathered on the ten manufacturing companies using a structured questionnaire.

Data was analysed in Chapter 5 by a descriptive analysis in the form of graphs, tables and charts. Statistical analysis in the form of frequencies, a correlation matrix, ANOVA, Chi-square goodness-of-fit tests and one-sample t-tests was employed. The reference model, the BSC, was used to assess whether PMSs in the sampled manufacturing companies were integrated (SPMSs) or not. The proposed associations between the

variables: strategy, organisational performance and use of SPMMSs were also investigated and validated. The second stage of the research involved developing a SPMMS suitable for manufacturing companies. The BSC was used as a reference model for this purpose. Qualitative techniques were used in the form of interviews, participative focus groups and observations. A case study approach was adopted for the SPMMS development. The applicability of the developed SPMMS was also tested.

8.5 Limitations of the Study

Sweeney, Williams and Anderson (2009:39) asserted that limitations are factors that may influence one's research outcomes if one does not control or limit them from the beginning of the research. By defining limitations, conclusions and recommendation findings can be generalised to other populations that share similar characteristics.

The following limitations were significant in this research:

i) This limitation emanated from the data collection tool used a structured questionnaire because of the following weaknesses of questionnaires cited by Vik (2010:25:

- The research instrument's questions were closed-ended, which meant that the researcher could not ask follow-up questions and
- The use of a smaller sample due to convenience and accessibility to the researcher.

ii) The researcher conducted the research during production time at the sample manufacturing companies, while she was also a full-time employee. Thus study time was limited.

iii) There was limited research on the topic, particularly in terms of studies done in South Africa and Africa as whole. Published documents also lacked statistical data. This proves that the topic has still not been well researched in the country as well as in Africa. However, the researcher made all possible efforts to gather data using different libraries; using online data from relevant websites such as Statistics South Africa; and

she even contacted Statistics South Africa directly at one stage in order to gather information on manufacturing in KwaZulu-Natal and South Africa as a whole. The study focused on manufacturing companies in Kwa-Zulu Natal only. Therefore, the results might not be generalised to manufacturing companies in different provinces of South Africa or to the African continent as a whole.

iv) Due to the duration, extent and scope of the research, there was no opportunity for the researcher to see the developed SPMMS being implemented on a real case company in order to test the efficiencies and effectiveness of the developed SPMMS in assisting manufacturing industries to improve their organisational performance through the use of a SPMMS. It would have been ideal to test the developed model on a real case company, but this was not possible due to set time-frames and limited financial and practical resources.

8.6 Recommendations from findings

Micheli and Manzoni (2010:465-476), as quoted in the literature review, argued that the use of measures that are only financially focused will not give manufacturing companies a true picture of their overall performance, especially as the sector undergoes dynamic technological advancements, changes in inventory management and ever-changing customer preferences and demands. This means that PMSs for the sector have to be flexible enough to allow for changes in strategy, goals and objectives, as well as to give room for product innovation. Due to the dynamism of the industry, Kaplan and Norton (2008) suggested that manufacturers translate to a more integrated PMS that incorporates other perspectives like the employee, customer and internal business processes, than focus on the financial perspective only. Based on Kaplan and Norton's (2008) suggestion, the researcher integrated all stakeholder perspectives into the developed SPMMS in the form of a BSC. Results from the study, as discussed in Chapter 5 and in the literature review revealed that suppliers also play a major role in manufacturing. Hence, the researcher's developed BSC included a new perspective (supplier performance).

8.6.1 Use of SPMS to improve organisational performance

Results from the findings of this study, as discussed in Chapter 5, supported the three hypotheses formulated in the introductory chapter. The aim of the study was stated in Chapter 1 and it was to investigate the existence of a positive association between strategy (through formulation, implementation, and evaluation and (re)formulation) and organisational performance by using an appropriate SPMS. To make recommendations, the researcher will use the formulated hypotheses since they were tested and supported in Chapter 5.

- **There exists a positive relationship between the use of SPMSs and organisational performance**

Correlation analysis, as discussed in Chapter 5 and presented in Table 5.7.11, revealed significant positive correlations between the use of strategic measures (financial and non-financial) with overall organisational performance (both financial and non-financial).

Manufacturing companies are therefore encouraged to use SPMSs to improve organisational performance since the use of SPMS would help translate these strategies into clear objectives and measures that are easy to communicate to all employees.

8.6.2 Use SPMS to communicate and implement strategy effectively to improve organisational performance

- **There is an indirect positive relationship between effective strategy (implementation and evaluation) and organisational performance through the incorporation of financial and non-financial measures**

Strategy, when carefully formulated, clearly communicated and effectively implemented through the use of a SPMS, can help improve organisational performance.

According to Stevenson (2012), a strategy determines a firm's long-term goals and objectives, enabling prioritisation on the allocation of the resources necessary for executing the goals. The positive results of effective implementation and evaluation of

strategy were revealed on Table 5.7.10 which shows strong positive correlations with financial, customer and employee performance, which impact organisational performance. However, some of the manufacturing companies in KwaZulu-Natal are not communicating their strategies across all levels, as shown in Appendix H: results of the employee questionnaire where 52% of employees disagreed that the strategy had been communicated to them. This negatively impacts overall organisational performance. Executive managers showed higher agreement levels that strategy was being implemented and evaluated in the enterprises, yet the employees' levels of agreement were lower (Tables 5.5.3 and 5.5.4).

8.6.3 Use of SPMMS for earlier strategy (re) formulation

- **There is a positive association between the use of an integrated SPMMSs and the frequency of strategy re-formulations**

There is an indirect positive relationship between effective strategy (implementation and evaluation) and organisational performance through the incorporation of financial and non-financial measures. As envisaged in Chapter 1 and tested and proven in Chapter 5, (Table 5.7.10), a positive association exists between strategy re-formulation and organisational performance. This means that if a company uses a SPMMS, it is more likely to be aware of the need to (re)formulate strategies earlier than one that does not use a SPMMS.

The closer proximal relationships in Table 5.7.10 revealed that strategy re-formulation is associated with financial, customer and employee performance.

8.6.4 Incorporate both financial and non-financial measures in PMSs

The current emphasis on a few of the financial and non-financial performance indicators in KwaZulu-Natal manufacturing companies creates an unbalanced and disintegrated PMS as the PMSs do not incorporate all the necessary perspectives and performance measures. In order to be competitive, the researcher recommends that

performance measurement practices should not only identify a few performance indicators, as much as they measure past performance, they must also support and prepare for favourable future results. Results of the one-sample test, Table 5.7.8 and Figure 5.7.1, reveal that manufacturing companies are not using all of the financial and non-financial indicators of performance. Of the 24 possible performance indicators, the sampled companies are only concentrating on half while ignoring all the indicators relating to employee performance and satisfaction.

8.6.5. Reward employees for good performance and for meeting targets

A significant number of KZN manufacturing companies are not rewarding and incentivising employees for good performance. Although only 40% of the executive managers stated that their companies did not give employee rewards, the results from the employee questionnaire, as shown in Appendix H, show a higher level of disagreement (54%) that incentives are communicated to them. However, it was discovered during this study that incentives can assist in creating a motivated workforce that is more productive, efficient and proactive. Such a culture is practised by one of the sampled companies (KPPC), which has been giving a profit share to all its employees each year for the past fifty-five. The CEO of this company was quoted during the interview with the researcher saying *“We distribute profits to all our employees, every June, from kitchen staff, cleaners, to the most senior executive managers. This has resulted in the company developing a ready-to-work human resource that always works as a unified team, is innovative and always ready to produce effectively in order to meet both individual and organisational goals”*. This has become part of the company’s culture and every employee looks forward to receiving an incentive at the end of a financial period. From the ten year financials that were availed to the researcher during the study, KPPC never recorded any losses and the company has the longest serving employees, with some having stayed with the company for the past forty-five years.

8.6.6 Involve all managers in the design and selection of performance measures

From this study, only 50% of the companies involved managers in the selection of performance measurements (Figure 5.4.6, Chapter 5). However, findings from the literature review and as cited by Verweire and Van den Berghe (2004:11) revealed that managers from different functional areas play a particularly important role because they are the ones who lead and motivate employees to perform. Hence they need to be involved in all processes of performance measurement, including the design of the PMS and the selection of relevant and important measures. A motivated workforce is more efficient, more productive and produces a good quality product. This in turn reduces product defects, increases customer satisfaction and thereby results in repeat purchases, new customers, increased market share, increased revenue growth and overall organisational performance.

8.6.7 Set metrics to evaluate the performance of the individual employees and departments

Verweire and Van den Berghe (2004:37) stated that appropriate performance metrics are critical to a performance measurement system since they are the ones used to communicate objectives throughout the organisation and also to tailor the objectives to each individual role in the organisation. Another important role of explicit metrics is to link performance with rewards and incentives. However, according to Verweire and Van den Berghe (2004:37), quite a large number of companies struggle to set explicit metrics in their PMSs. This is evidenced by the number of respondents who disagreed when asked if explicit metrics were set in order to evaluate individual and departmental performance. Only 40% of the manufacturing companies completely agreed to setting metrics, as shown in Figure 5.4.3.

8.6.8 Set and communicate explicit goals, objectives and targets for both individual employees and departments

As shown on the strategy map for KPPC in Chapter 6, goals and targets are usually set for a particular manufacturing function. For example, a target for production would be to reduce operating costs by 12%. Striteska (2012:1103-1110) stated that a company that sets and communicates clear goals will manage and motivate its employees even more effectively than one which uses only financial incentives. However, most of the case companies do not set goals and objectives for their employees, with 40% of the respondents indicating on Figure 5.4.2 (Chapter 5) that they do not have goals and objectives set for employees. Goals guide both the organisation and its employees to stay focused and on course by preventing distractions.

As long as set goals and targets are SMART (Thompson et al. 2007:20):

- They would assist employees to have clarity on what the company's priorities are. Therefore employees know what they need to focus on;
- If employees are rewarded for achieving goals and meeting targets, they are motivated to perform better;
- The organisation as well as its employees are able to measure performance since there is a fixed and known endpoint;
- Setting goals enables benchmarking by comparing history to current results;
- Teamwork would improve since employees will have to work together as they share a common purpose of achieving targets, especially when there are group incentives and rewards for meeting departmental targets; and
- There is prioritisation and maximised usage of resources, since organisations usually have limited resources.

8.6.9 Give regular feedback on individual performance

Although 60% of the respondents in this study give employees feedback on their departmental and organisational performance, 40% of them, (from results of the employee questionnaire) do not know how they can assist in improving performance as they do not receive feedback on their own individual performance. However, companies need to be aware that without feedback, employees are bound to make the same mistakes. A lack of individual feedback hinders personal growth. Feedback improves performance as employees are made aware of what they need to do in order to meet expectations. However, feedback needs to be constructive and companies need to put in place training programs so that when weaknesses are identified, employees are trained and equipped with the necessary skills to improve performance. As further cited by Pekkola (2013), feedback is equally motivating and energising because it leads to employee satisfaction and improved employee performance.

8.6.10 Introduce and implement Succession Planning

It was observed from the findings of the research, Figure 5.3.1 that 40% of the executives had worked for their respective companies for more than 20 years; 19% of the employees had also been in their companies for over 20 years; while 22% were 15 – 20 years in service. While 40% of executive managers admitted that employees were not receiving training (Table 5.4.5), the number actually increased to 50% when employees were asked if they received training at all (Appendix H). Without training and employee development, the need for succession planning is not identified. This can cause problems in the future since manufacturing companies use complex systems and internal processes. The researcher therefore urges manufacturing companies in KZN to take precautions and think about the future and train and develop their current talent so that future transitions of bringing in new managers and taking out the older leaders when they retire is smooth and successful. This strategy is important for the organisation's continuity and ongoing success.

➤ **Recommendations based on the BSC :**

In order to improve the existing measurement practices and organisational effectiveness in KwaZulu-Natal manufacturing, the following areas of intervention are suggested by the researcher, based on the reference model's perspectives:

8.6.11 Incorporate more customer measures into SPMS

Manufacturing companies are encouraged to incorporate non-financial perspectives into their PMSs in order to improve customer satisfaction and retention measures. According to Kaplan and Norton (2008), customers choose companies that will delight them and delighted customers are loyal customers. A business priority for KZN manufacturing companies should therefore be to meet customer demands and preferences. An unsatisfied customer impacts negatively on organisational performance. Improving customer satisfaction would lead to an increase in market share and loyalty, thereby positively impacting on organisational performance. Out of six performance indicators that measure customer satisfaction, the sampled companies only significantly agreed to the use of two indicators, as shown by the mean scores in Figure 5.7.1.

8.6.12 Improve internal operational processes

As argued by Kaplan and Norton (2008) and as highlighted in the literature review, conducting internal business processes efficiently will result in service excellence, which in turn yields a good quality product. This would result in satisfied customers and therefore overall organisational success, as shown by the links and relationships of the perspectives on the strategy map for KPPC in Chapter 6. A lack of focus on customer measures will result in the company losing its existing customers and in turn, loss of revenue and a decreased market share. To this effect, the researcher recommends that business / internal operation processes of KZN manufacturing companies be used as

performance measures and be incorporated into PMSs in order that they are able to improve the processes and meet customer demands, thereby increasing market share.

8.6.13 Train and develop employees

Results of this study revealed very low scores on employee measures amongst the sampled manufacturing companies. This might lead to high staff turnover, leading to these companies losing some of their best talent and skilled employees. This, in turn, would lead to lower financial performance of the organisations. Findings from this study revealed that 17% of employee respondents, some of whom included managers, had no formal qualification at all, while 25.6% only had a matric certificate. This means that some of the managers who are assigned the setting of targets and formulating, communicating and implementing strategies also lack the academic and technical skills to do so themselves. The training and development of all employees from top to bottom is required in the case companies to ensure individual development, which would also mean overall organisational development and growth.

8.6.14 Link performance measures to the organisation's strategy and mission

Since it was emphasised during the development of the SPMMS that organisations whose performance measures are aligned with long-term strategy perform better, it is therefore recommended that manufacturing companies in KZN adopt SPMMSs to link measures to the strategy and mission and also to measure and manage their performance. One such tool is the BSC, whose validity and applicability to manufacturing enterprises was tested in Chapter 7. This is because the vision and strategy of an organisation in the developed BSC is considered from five different perspectives: financial; customers; internal business processes; suppliers; and learning and growth. The organisation's goals would then be aligned with each quadrant of the BSC. For example, the information technology department's goals would be to create CRM software for customer satisfaction (customer quadrant). It might also be the role of IT to provide the finance department (financial quadrant) with reports and results

within budget, create software that can efficiently support production and operations departments (internal business processes). Another example would be the HR department having the goal to attract, train, develop and retain the best talent (learning and development) to ensure that business processes are efficient. By setting measurable and achievable targets and then cascading the goals to each employee and each department, each employee therefore knows the importance of their role and would feel valued by the organisation. A motivated workforce as shown on the strategy map, (Figure 6.5 in Chapter 6) assists in creating and increasing shareholder value and the overall growth of the organisation. This relationship of linking performance measures to the strategy, vision and mission can be summarised in a diagram, as shown below:



Figure 8.1: Linking performance measures to strategy and vision

Source: Author's own

8.6.15 Incorporate inventory management as a performance measure

As defined by Kosgei and Gitau, (2016:134-148) inventory management is a system which shows how a company manages its inventories from the time the stock is ordered from suppliers to how the stock is stored and then used in production. Three types of inventory exist in manufacturing organisations; namely and they are: a) stock of

raw materials, b) stock of work in progress and c) stock of finished goods. This inventory, if not well managed, can become obsolete due to damages, or at each stage of production. The importance of inventory management cannot be over-emphasised. Inventory management assists manufacturing companies to avoid overstocking, which in turn would increase carrying costs, would tie up working capital, increase pilferages, wastages and losses due to some stock being written-off when it becomes obsolete.

As briefly discussed in Chapter 3, one system that manufacturing companies use to manage inventory is the Kanban system, which was introduced by Toyota in order to improve efficiency during its manufacturing processes. Another management system is JIT (Just-In-Time), which encompasses ordering stock from a supplier only when a customer places and confirms an order. This helps the manufacturer avoid unwanted stock and reduces warehousing and storage expenses. However, manufacturers who employ lean production in the form of JIT must also manage their supply chain effectively to avoid constant stock-outs. This is also critical for some KZN manufacturing companies who have to import some of their raw materials for production. Inventory stock-outs result in the interruption of the whole production process, late delivery of customer orders and customer dissatisfaction, hence the introduction of suppliers as a stakeholder and as a performance dimension. Suppliers were also incorporated as an additional non-financial perspective in the developed SPMMS for the same reason. Manufacturing companies should therefore invest in inventory management software. Most of the case companies already use Accounting packages like Sage Pastel, Quickbooks and Xero to capture data and measure financial performance. All these types of software would already have inventory management systems installed and with a few upgrades and training of employees, inventory can efficiently be managed for effective organisational performance.

8.6.16 Introduce and adhere to employment equity policies in order to curb gender inequalities

Statistics South Africa (2018), in its quarterly release, reported that women accounted for only 32.8% of total employment in the country, a figure that has not shifted much

since 2002. Women only account for 32% of managers in South Africa while 68% are men. It was stated in the same report that women dominated the domestic worker, clerical or technical positions, while men dominated the rest. Results from the employee questionnaire also revealed that the manufacturing sector is dominated by male employees. The gender ratios presented in Figure 5.3.2 (32.9% female and 67.1% male) also agree with the results released by Statistics South Africa (2018). Manufacturing companies and the labour market as a whole are encouraged to have employment policies so that candidates are selected based on qualifications and not based on gender, race or disability. When all employees are treated fairly in the workplace, they get motivated and work together as a team to achieve goals and objectives.

8.6.17 Use strategy maps to communicate and translate organisational strategy, goals and objectives

As Bourne and Bourne (2007:42) stated, many organisations' strategies fail because managers fail to share and communicate the company's vision to lower level employees, resulting in ineffectiveness and problems during implementation. A strategy map can be used by managers to help employees understand the company's strategy and translate it into action in order to achieve strategic objectives and goals. Since a strategic map is a diagrammatic representation on a single piece of paper, it is easier to understand and follow. The map shows the cause and effect relationships between objectives and outcomes and it shows what drives performance. Since a strategy map as shown in Chapter 6 focusses on defining objectives first then the performance measures second, it means that resources are not wasted on measuring what is unimportant. A strategy map would also help communicate and disseminate the strategic plans of the company to every employee, resulting in everyone being motivated and contributing towards the organisation's success. By using a strategy map, a business can easily monitor progress and re-formulate strategies that are not working. Strategy maps therefore allow changes in objectives to be made or to add new targets and objectives altogether, making room for continuous improvements.

8.7 Further Research

The researcher recommends further research as follows:

- More extensive research could be carried out on a larger population, involving more companies from different sections of industry and also from different provinces of South Africa.
- Other research could also be conducted to do a proper implementation and test the developed model on a real case company to evaluate its effectiveness.

8.8 Summary

The main objectives of the study were revisited so that a final analysis of the research could be provided. The key findings from research and literature review were summarised while the study's contributions to theory were also stated. Research limitations, proposals for future studies as well as recommendations to manufacturing companies were also identified and highlighted. In this study, the researcher examined the PMSs being used in the ten manufacturing companies that were sampled. It was discovered that most of the manufacturing companies were not using all the performance measures for financial and non-financial performance. Based on the findings from the literature review and findings from the study, the researcher developed a SPMMS for manufacturing companies. There are some factors that stand out about the developed SPMMS: firstly, the developed BSC is very simple and practical and can thus be easily used for performance measurement in manufacturing companies of any size. Secondly, the SPMMS is generic, which makes it possible to be used by any company in the manufacturing sector. Thirdly, the developed SPMMS involves weights given to the attributes on the audit sheet, which makes the performance evaluation more accurate. Fourthly, the designed audit sheet enables the proper auditing of results by internal or independent auditors, which is also one of the requirements of SPMMSs.

8.9 Conclusion

Chapter 1 stated the aims and objectives of this study, while Chapter 3 stated the guidelines of SPMMSs. The stated objectives were then met by using a questionnaire to answer research questions formulated from the guidelines of SPMMS. Chapter 5 presented answers to the questions by presenting gathered data in easy to understand formats in the form of tables, graphs and charts. Results of findings provided evidence to support all the three hypotheses that were formulated in Chapter 1. These results also revealed that, although developing a SPMMS is time-consuming and might be costly; the benefits outweigh these costs by significantly improving organisational performance. A company that uses a SPMMS will therefore achieve and sustain its competitive advantage.

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APPENDIX A: REQUEST TO CONDUCT STUDY

Date: 1 April 2016

The Managing Director / Chief Executive Officer

Title of the Research Study: The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal

Principal researcher: Eddeline Maposa

I am writing to request permission to conduct a research study at your organisation. I am currently studying towards a Doctor of Philosophy in Management Sciences: Business Administration Degree at Durban University of Technology here in Durban.

The main objective of the research is to examine how strategic performance measurement systems influence organisational performance through the shaping of the strategic agendas and strategic decision arrays that result from the processes of (re)formulation, implementation, evaluation and control of intended strategies. The research will also determine whether organisations that use strategic performance measurement systems engage in strategy (re)formulation and implementation processes more frequently and more effectively than organisations that do not.

I would like to note to you that participation of your organisation in this study is voluntary. If you choose to participate but decide to withdraw at a later stage, it is your prerogative, only I would kindly request that you inform me. The choice to withdraw from the research will not prejudice your organisation in any way.

Confidentiality

Any confidential reports, records and information pertaining to your organization will be kept confidential. Such information will only be made available to people involved in this research

Risks

The risks associated with participation in this study are no greater than those experienced in daily life.

Benefits

There will be no personal material benefits to you or the organisation but this research will help the organisation in compiling information on how to measure and manage its performance so that there is overall organisational effectiveness and performance. No costs will be incurred by either your organisation or the individual participants.

Your approval to conduct this study will be greatly appreciated. I will follow up with a telephone call tomorrow and would be happy to answer any questions or concerns that you may have at that time.

If you agree, may you kindly submit a signed letter of permission on your institution's letterhead acknowledging your consent and permission for me to conduct this survey/study at your organisation.

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

Please contact the researcher (cell no: 0730973476), my supervisor (cell no: 0837861326) or the Institutional Research Ethics administrator on 031 373 2900. Complaints can be reported to the DVC: TIP, Prof F. Otieno on 031 373 2382 or dvctip@dut.ac.za



APPENDIX B (1): LETTER OF INFORMATION (CEO / EXECUTIVES)

Faculty of Management Sciences

Department of Public Management & Economics

Date: 24 May 2018

Dear Participant

Research Topic on:

The role of performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal.

I, Eddeline Maposa, Student Number: 21452738, am studying towards a PhD in Management Sciences: Business Administration at Durban University of Technology. I would like to request your assistance in completing the questionnaire provided. The purpose of this survey is to explore the impact performance measurement systems have on strategy formulation, implementation, evaluation and organisational performance. This will assist in identifying further developmental areas and in compiling practical and relevant recommendations for the organisation. This can only be achieved through your full participation.

The questionnaire is divided into five sections:

Section A: Personal Information

Questions about the education, position levels and years of service of the participants

Section B: Company Profile

Questions about nature of business and number of employees

Section C: Strategy

Questions about strategic formulations, implementations, evaluations and (re)formulations.

Section D: Performance management system

Questions on types of PMSs used and degree of use of financial and non-financial performance indicators.

Section E: Organisational Performance

Questions about financial performances, indication of growth by use of different financial ratios.

All questionnaires completed will be treated in the strictest confidence.

INSTRUCTIONS TO PARTICIPANTS

Thank you for your willingness to complete the questionnaire

The researcher will collect them after completion.

The questionnaire consists of 92 statements. It takes approximately 15 minutes on average to complete it.

Please read each statement and indicate your level of agreement or disagreement by placing a tick (✓) in the box with your appropriate response.

EXAMPLE:

QUESTION: Operating managers from different functional areas are involved in the design and selection of the performance measures.

If you strongly disagree with this statement, tick the block below ‘**Strongly Disagree**’

Strongly Disagree	Disagree	Slightly Disagree	Agree	Strongly Agree
✓				

THANK YOU FOR YOUR COOPERATION

Eddeline Maposa

TIPS

- Please answer all questions and choose only one answer per question.
- **Attached definitions:**
 - **Performance measurement systems (PMSs)** are concise sets of metrics (financial and/or non-financial) that support the decision-making processes of an organisation by gathering, processing and analysing quantified information about its performance, and presenting it in the form of a succinct overview.
 - **Strategic performance measurement systems (SPMSs)** are those PMSs that present distinctive features such as the integration of long-term strategy and operational goals, the provision of performance measures in the area of multiple perspectives and the provision of a sequence of goals/metrics/targets/action plans for each perspective.
- **Attached acronyms:** BSC = Balanced scorecard, SMART = Strategic measurement and reporting technique, PP = Performance prism, PMM = Performance measurement matrix, PMS = Performance measurement system



APPENDIX B (2): LETTER OF INFORMATION (Employee)

Faculty of Management Sciences

Department of Public Management & Economics

Date: 24 May 2018

Dear Participant

Research Topic on:

The role of performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal

I, Eddeline Maposa, Student Number: 21452738, am studying towards a PhD in Management Sciences: Business Administration at Durban University of Technology. I would like to request your assistance in completing the questionnaire provided. The purpose of this survey is to explore the impact performance measurement systems have on strategy formulation, implementation, evaluation and organisational performance. This will assist in identifying further developmental areas and in compiling practical and relevant recommendations for the organisation. This can only be achieved through your full participation.

The questionnaire is divided into two sections:

Section A: Personal Information

Questions about the education, position levels and years of service of the participants

Section B: Strategy

Questions about communication of strategy, performance evaluation, feedback, training and development, rewards and incentives.

All questionnaires completed will be treated in the strictest confidence.

INSTRUCTIONS TO PARTICIPANTS

Thank you for your willingness to complete the questionnaire

The researcher will collect them after completion.

The questionnaire consists of 26 statements. It takes approximately 5 minutes on average to complete it.

Please read each statement and indicate your level of agreement or disagreement by placing a tick (✓) in the box with your appropriate response.

EXAMPLE:

QUESTION: Company strategy is communicated to me

If you agree with this statement, tick the block below '**Agree**'

Strongly Disagree	Disagree	Slightly Disagree	Agree	Strongly Agree
			✓	

THANK YOU FOR YOUR CO-OPERATION

Eddeline Maposa

APPENDIX C (1)

LICKERT SCALE QUESTIONNAIRE

The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu-Natal

Questionnaire CEO/ Owner/ Executive manager

Section A: PERSONAL INFORMATION

1 What is the level of your position in the company?

CEO	Director	Owner	Executive Manager	Other (Specify) _____

2 What is your level of education?

No formal education	Some schooling	Matric	Certificate	Diploma	Bachelor's degree	Higher degree

3 How long have you worked for this company?

Less than 5 years	5 - <10 years	10 - <15 years	15 - <20 years	20+ years

Section B: COMPANY PROFILE

4 What is the nature of your business?

Printing and packaging	Chemicals & associated products	Paper & board manufacturing	Plastic products	Printing equipment manufacturing
Pharmaceutical products	Food and Beverages	Beauty Products	Other (Specify) _____	

5 What is the total number of employees in your company?

1 - 200	201 - 400	401 - 600	601 - 800	801+

Section C: STRATEGY

Indicate your agreement with the following statements regarding your company:

1 Strategy Formulation

IN OUR COMPANY...	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1.1 Explicit goals and objectives are set						
1.2 Objectives are set for each employee to fulfil a specific role in the company						
1.3 Metrics are used to identify and motivate, train and redirect non-performing or under-performing individuals or departments						
1.4 Explicit performance targets are set						
1.5 Performance targets are aligned with corporate goals						
1.6 Metrics are set to evaluate the performance of the individuals and departments						
1.7 Metrics are set that link performance with rewards and incentives						
1.8 Performance measures are linked to long-term strategy						
1.9 Metrics are set to evaluate and monitor organisational performance						
1.10 Performance measures are set to link to the organisation's vision and mission						
1.11 Performance measurements used are designed to facilitate auditing						
1.12 Performance measurements are set based on the company objectives and strategy						
1.13 All managers are involved in the design and selection of performance measurements						

2 Strategy Implementation

IN OUR COMPANY...	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
2.1 The vision and mission of the organisation are communicated to all employees						
2.2 Company strategy is communicated to all employees						
2.3 Employees are made aware of how individuals' and departments' performance affect the overall organizational performance						
2.4 Employees are made aware of how their performance is linked to rewards and incentives						
2.5 Company goals and objectives are clearly communicated to all employees						
2.6 Employees are made aware of how their performance is evaluated (e.g. what formula is used)						
2.7 Performance measurement results and the processes used to get the measures are communicated to all employees						
2.8 Incentives for the fulfilment of objectives are clearly communicated to all employees						
2.9 The strategies set and measurements used in the company are available for all employees to see.						

3 Strategy Evaluation

IN OUR COMPANY...	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
3.1 There is ongoing monitoring of organisational performance						
3.2 Employees are regularly evaluated on their performance						
3.3 Organizational performance is analysed and reported graphically						
3.4 Regular feedback is given to employees regarding their performance						
3.5 Regular feedback is given to employees regarding the performance of their department						
3.6 Regular feedback is given to employees regarding the performance of the organisation as a whole						
3.7 Employees receive training, when needed, for continuous development						
3.8 Employees receive rewards and incentives based on their performance						

4 Strategy Reformulation

IN OUR COMPANY...	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
4.1 Performance measures are modified whenever company objectives change						
4.2 Feedback from performance measurement is used to reformulate or revise strategies, when and where necessary						
4.3 After evaluation of the strategies, actions (e.g. diversification, opening new markets, outsourcing etc) are taken, if indicated as necessary/desirable						
4.4 Areas that require special focus are identified and new strategies are set						

Section D: PERFORMANCE MANAGEMENT SYSTEM

1 Indicate your agreement with the following statements regarding your company:

IN OUR COMPANY...	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1.1 There is a performance measurement system (PMS)						
1.2 There is a strategic performance measurement system (SPMS)						
1.3 The PMS focuses on financial measures only						
1.4 The PMS focuses on both financial and non-financial measures						

2 Indicate your agreement that the following **FINANCIAL** performance indicators are used:

Performance Indicators	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
2.1 Revenue growth						
2.2 Improved profit margins						
2.3 Increase in working capital						
2.4 Increased market share						
2.5 Return on assets (ROA)						
2.6 Return on investment (ROI)						
2.7 Increased shareholder value						

3 Indicate your agreement that the following **CUSTOMER** performance indicators are used:

Performance Indicators	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
3.1 Proportion of company's customers compared to industry total						
3.2 Total customer spend compared to industry total						
3.3 Company's market share compared to industry total						
3.4 Rate at which customers are retained						
3.5 Rate at which new customers are being attracted						
3.6 Number of repeat purchases						

4 Indicate your agreement that the following **INTERNAL BUSINESS PROCESS** performance indicators are used:

Performance Indicators	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
4.1 Measures of operational excellence						
4.2 Through put time						
4.3 Quality of product/service						
4.4 Productivity						
4.5 Number of product defects						

5 Indicate your agreement that the following **GROWTH/EMPLOYEE** performance indicators are used:

Performance Indicators	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
5.1 Employee satisfaction with rewards and incentives						
5.2 Skill levels of employees						
5.3 Effectiveness of communication and feedback						

6 Indicate your agreement that the following **SUPPLIER** performance indicators are used:

Performance Indicators	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
6.1 Quality of raw materials delivered						
6.2 Order cycle times						
6.3 On-time delivery from suppliers						

7 Which **ONE** of the following PMS is used in your organisation?

BSC	PMM / PP	EFQM	SMART Pyramid	Other (Specify)

Section E: ORGANISATIONAL PERFORMANCE

1 Indicate your financial performance for the following indicators based on your management reports:

1.1 Average annual **sales turnover** for the past 5 years

R0 - R50m	R51m - R150m	R151m - R250m	R251m - R350m	>R350m

1.2 Percentage **change in sales growth** in the past financial year – **indicate percentage and direction (increase/decrease)**

0%	1-10%	11-20%	21-25%	26-30%	>30%

Increase	Decrease

1.3 Percentage **change in cash flow to sales** in the past year - **indicate percentage and direction (increase/decrease)**

0%	1-10%	11-20%	21-25%	26-30%	>30%

Increase	Decrease

1.4 **Current ratio** in the past financial year

< 1	1 - <2	2 - 3	>3

1.5 **Acid / Quick Ratio** in the past financial year

< 1	1 - <2	2 - 3	>3

1.6 Percentage **change in operating profit margin** in the past financial year - **indicate percentage and direction (increase/decrease)**

0%	1-5%	6-10%	11-15%	16 -20%	>20%

Increase	Decrease

1.7 **Return on assets ratio** in the past financial year

< 1	1 - <5	5 - <10	10 - 20	>20

2 Indicate the performance of your company regarding the following non-financial performance indicators:

For each of the following performance indicators, rate the performance of your company on a scale of 1 to 10, where **1 = Not at all good and 10 = Extremely good.**

Performance Indicators	Performance rating 1 - 10
CUSTOMERS	
2.1 Proportion of company's customers compared to industry total	
2.2 Total customer spend compared to industry total	
2.3 Company's market share compared to industry total	
2.4 Rate at which customers are retained	
2.5 Rate at which new customers are being attracted	
2.6 Number of repeat purchases	
INTERNAL BUSINESS PROCESSES	
3.1 Measures of operational excellence	

3.2 Through put time	
3.3 Quality of product/service	
3.4 Productivity	
3.5 Number of product defects	
LEARNING & GROWTH / PEOPLE	
4.1 Employee satisfaction with rewards and incentives	
4.2 Skill levels of employees	
4.3 Effectiveness of communication and feedback	
SUPPLIERS	
5.1 Quality of raw materials delivered	
5.2 Order cycle times	
5.3 On-time delivery from suppliers	

THANK YOU FOR YOUR TIME

APPENDIX C (2)

Questionnaire: Employees

Section A: PERSONAL INFORMATION

1 What is the level of your position in the company?

Admin	Junior Management	Middle Management	Senior Management	Other (Specify) _____

2 What is your level of education?

No formal education	Some schooling	Matric	Certificate	Diploma	Bachelor's degree	Higher degree

3 How long have you worked for this company?

Less than 5 years	5 - <10 years	10 - <15 years	15 - <20 years	20+ years

4 Which department do you work in?

Finance Accounting &	Production Operations /	Information Technology	Human Resources	Sales & Marketing

5 Gender

Male	Female

Section B: STRATEGY

Indicate your agreement with the following statements regarding your experience in the company:

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1 The vision and mission of the organisation have been communicated to me						
2 Company strategy has been communicated to me						
3 I have been made aware of how my performance and that of my department affect the						

overall organizational performance						
4 I have been made aware of how my performance is linked to rewards and incentives						
5 Company goals and objectives have been clearly communicated to me						
6 I know how my performance is evaluated (e.g. what formula is used)						
7. I am involved in data collection for my performance evaluation						
8 Performance measurement results and the processes used to get the measures have been communicated to me						
9 Results from performance measurement are presented graphically						
10 Incentives for the fulfilment of objectives have been clearly communicated to me						
11 The strategies set and measurements used in the company are available for me to see.						
12 I am involved in all the processes of performance measurement						
13 I am regularly evaluated on my performance						
14 Regular feedback is given to me regarding my performance						
15 Regular feedback is given to me regarding the performance of my department						
16 Regular feedback is given to me regarding the performance of the company as a whole						
17 Training for my continuous development is available to me						
18 I am eligible to receive rewards and incentives based on my performance						
19 I understand the measurement used to evaluate my performance						
20 Incentives for the fulfilment of objectives have been clearly defined for me personally						
21. Performance results are always available for me to review						

THANK YOU FOR YOUR TIME

APPENDIX D

Structured interview schedule – for KPPC

These follow-up questions were developed by the researcher based on guidelines for SPMMSs and components of an integrated PMS (BSC) that were discussed in literature review (chapter 3) and findings of the first stage of the research. These were only intended for the CEO, as a follow-up to what had already been asked on the questionnaire and to get a clearer picture of the strategies and objectives that were going to be on the developed BSC. The researcher used structured interviews as follows:

Business Strategy

What is the vision of KPPC?

What is the mission of the company?

Why do you want to change your current PMS to a SPMMS?

What is your manufacturing strategy?

What are the goals and objectives of KPPC?

What is your production strategy?

What is your revenue strategy?

Who do you value as important stakeholders?

Business internal processes

What are the main focus areas of your internal processes?

What have you identified as the main problems in your internal processes?

How do you intend to improve your business processes in order to meet your objectives?

Do you have multiple manufacturing sites?

Are you planning on expansion or innovation of new products?

Are you required to fulfill any statutory or government regulations?

Customer satisfaction

Which product/s do you produce?

Who is your target market?

Do you measure customer rejection and complain rates?

How long is your order processing time?

Do you export some of your produce?

Supplier performance and inventory management

Do you source all your inputs locally or you import some?

What are your main production inputs?

Are you satisfied with the quality of the raw materials you receive from your suppliers?

How reliable are your suppliers?

What supplier problems do you face?

Do you have a warehouse to store raw materials or you outsource this service?

Do you have an inventory management system, for example, JIT?

How do you maintain the quality of inputs while in storage?

What problems have you encountered with your current inventory management system?

Employee satisfaction

Do you measure employee turnover rate?

Do you have an employee relations management system?

Do you have a succession plan in place?

APPENDIX E



MANAGEMENT SCIENCES: FACULTY RESEARCH ETHICS COMMITTEE (FREC)

2 April 2019

Student Name: Ms. E Maposa
Student No: 21452738
FREC REF: 19/18FREC

Dear Ms Maposa

PhD IN MANAGEMENT SCIENCES: BUSINESS ADMINISTRATION

TITLE: THE ROLE OF STRATEGIC PERFORMANCE MEASUREMENT SYSTEMS ON OVERALL STRATEGY AND ORGANISATIONAL PERFORMANCE: A FOCUS ON MANUFACTURING COMPANIES IN KwaZulu-Natal

Please be advised that the FREC Committee has reviewed your proposal and the following decision was made: **Approved – Ethics Level 2**

Date of FRC Approval: 24 April 2018

Approval has been granted for a period of two years from the above FRC date, after which you are required to apply for safety monitoring and annual recertification. Please use the form located at the Faculty. This form must be submitted to the FREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the FREC according to the FREC SOP's.

Please note that ANY amendments in the approved proposal require the approval of the FREC as outlined in the FREC SOP's.

Yours sincerely

Prof JP Govender
Chairperson: Faculty Research Ethics Committee

APPENDIX F



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30 September 2019

Permission to conduct interviews

I, Yvette Roberts, have given Eddeline Maposa permission to conduct interviews in our organisation during the development of our new Balanced Scorecard. The researcher is not allowed to record any discussions but she can make her own notes. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**

Yours sincerely

Managing Director



Directors: E D Roberts, Y J Roberts

APPENDIX G



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Website: www.proprint.co.za

30 September 2019

Permission to attend focus group meetings

I, Yvette Roberts, have given Eddeline Maposa permission to attend focus group meetings which will take place at our company during the development of our Balanced Scorecard. The researcher is allowed to attend but cannot record any discussions, however, she is allowed to make her own notes and to ask further questions. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**

Yours sincerely

Managing Director



Directors: E.B Roberts, Y.L Roberts

APPENDIX H: Statistical analysis: Employees

Section B Strategy

The vision and mission of the organisation have been communicated to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	34	10.0	10.0	10.0
	Disagree	63	18.5	18.5	28.5
	Slightly disagree	49	14.4	14.4	42.9
	Slightly agree	80	23.5	23.5	66.5
	Agree	92	27.1	27.1	93.5
	Strongly agree	22	6.5	6.5	100.0
	Total	340	100.0	100.0	

Company strategy has been communicated to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	36	10.6	10.6	10.6
	Disagree	82	24.1	24.1	34.7
	Slightly disagree	59	17.4	17.4	52.1
	Slightly agree	69	20.3	20.3	72.4
	Agree	71	20.9	20.9	93.2
	Strongly agree	23	6.8	6.8	100.0
	Total	340	100.0	100.0	

Incentives for the fulfilment of objectives have been clearly communicated to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	57	16.8	16.8	16.8
	Disagree	72	21.2	21.2	37.9
	Slightly disagree	54	15.9	15.9	53.8
	Slightly agree	48	14.1	14.1	67.9
	Agree	75	22.1	22.1	90.0
	Strongly agree	34	10.0	10.0	100.0
	Total	340	100.0	100.0	

Company goals and objectives have been clearly communicated to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	31	9.1	9.1	9.1
	Disagree	55	16.2	16.2	25.3
	Slightly disagree	49	14.4	14.4	39.7
	Slightly agree	93	27.4	27.4	67.1
	Agree	85	25.0	25.0	92.1
	Strongly agree	27	7.9	7.9	100.0
	Total	340	100.0	100.0	

Training for my continuous development is available to me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	26	7.6	7.6	7.6
	Disagree	59	17.4	17.4	25.0
	Slightly disagree	85	25.0	25.0	50.0
	Slightly agree	90	26.5	26.5	76.5
	Agree	69	20.3	20.3	96.8
	Strongly agree	11	3.2	3.2	100.0
	Total	340	100.0	100.0	

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.936
Bartlett's Test of Sphericity	Approx. Chi-Square	5169.314
	df	105
	Sig.	.000

KMO of .936 indicates that the data was adequate for successful and reliable extraction. A significant **Bartlett's test (p<.05)** indicates that **correlations between items are not too low for a successful result.**

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	9.778	65.188	65.188	9.475	63.167	63.167	9.031
2	1.212	8.078	73.267	.963	6.421	69.588	7.245
3	.839	5.591	78.858				
4	.645	4.301	83.159				
...							
14	.126	.840	99.430				
15	.085	.570	100.000				

Extraction Method: Principal Axis Factoring.

Two factors were extracted which account for 73.27% of the variance in the data.

Total Variance Explained

Factor	Name	Items included	Cronbach's alpha
F1 - Strategy implementation	STRATIMP	1-6, 8-11, 20	.958
F2 - Strategy evaluation	STRATEVAL	13-16	.907

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
STRATIMP	340	3.4027	1.23723	.06710
STRATEVAL	340	3.8816	1.24570	.06756

One-Sample Test

	Test Value = 3.5					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
STRATIMP	-1.451	339	.148	-.09733	-.2293	.0347
STRATEVAL	5.649	339	.000	.38162	.2487	.5145

There is sig agreement that strategy evaluation is carried out in these firms, from the perspective of the employees, $M=3.88$, $t(339) = 5.649$, $p<.0005$.

APPENDIX I

Statistical analysis: executive managers

Section C Strategy

Strategy formulation

Firm*	C1.1 Explicit goals and objectives are set : Crosstabulation				Total
	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	1	1
KPGS	0	0	0	1	1
KDM	0	1	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	0	1	0	0	1
KLCC	0	0	1	0	1
KPDMC	0	0	1	0	1
Total	1	2	4	3	10

Firm*	C1.2 Objectives are set for each employee to fulfil a specific role in the company :				Total
	Crosstabulation				
	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	1	1
KPGS	0	0	1	0	1
KDM	0	1	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	0	1	1
KIEEM	0	1	0	0	1
KLCC	0	0	0	1	1
KPDMC	1	0	0	0	1
Total	2	2	2	4	10

Firm*	C1.3 Metrics are used to identify and motivate, train and redirect non-performing or under-performing individuals or departments: Crosstabulation					Total
	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	0	1	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	0	1	1
KPMC	0	0	0	0	1	1
KIEEM	0	0	1	0	0	1
KLCC	0	0	1	0	0	1
KPDMC	0	0	0	1	0	1
Total	1	1	2	1	5	10

Firm*	C1.4 Explicit performance targets are set: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	0	1	1
KDM	0	1	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	1	0	0	1
KIEEM	0	1	0	0	0	1
KLCC	0	0	1	0	0	1
KPDMC	0	0	1	0	0	1
Total	1	2	3	1	3	10

Firm*	C1.5 Performance targets are aligned with corporate goals: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	0	1	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	0	1	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	2	2	1	4	1	10

Firm*	C1.6 Metrics are set to evaluate the performance of the individuals and departments:						Total
	Crosstabulation						
	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	1	0	1
KPGS	0	0	0	0	1	0	1
KDM	1	0	0	0	0	0	1
KCBM	0	1	0	0	0	0	1
KIGM	0	0	0	0	0	1	1
KRP	0	0	0	0	1	0	1
KPMC	0	0	0	1	0	0	1
KIEEM	0	0	1	0	0	0	1
KLCC	0	1	0	0	0	0	1
KPDMC	0	0	0	1	0	0	1
Total	1	2	1	2	3	1	10

Firm*	C1.7 Metrics are set that link performance with rewards and incentives:						Total
	Crosstabulation						
	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	0	1	1
KPGS	0	0	0	0	1	0	1
KDM	1	0	0	0	0	0	1
KCBM	0	1	0	0	0	0	1
KIGM	0	0	0	0	0	1	1
KRP	0	0	0	0	1	0	1
KPMC	0	0	0	1	0	0	1
KIEEM	0	0	1	0	0	0	1
KLCC	0	0	0	0	1	0	1
KPDMC	0	0	0	1	0	0	1
Total	1	1	1	2	3	2	10

Firm*	C1.8 Performance measures are linked to long-term strategy: Crosstabulation					Total
	Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	0	1	0	0	0	1
KLCC	0	0	0	1	0	1
KPDMC	0	0	1	0	0	1
Total	1	2	1	5	1	10

Firm*	C1.9 Metrics are set to evaluate and monitor organisational performance: Crosstabulation				Total
	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	1	0	0	0	1
KLCC	1	0	0	0	1
KPDMC	0	1	0	0	1
Total	4	1	4	1	10

Firm*	C1.10 Performance measures are set to link to the organisation's vision and mission: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	1	0	0	1
KIEEM	1	0	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	1	0	0	0	1
Total	3	2	1	3	1	10

Firm *	C1.11 Performance measurements used are designed to facilitate auditing: Crosstabulation					Total
	Strongly disagree	Disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	1	0	0	1
KDM	0	1	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	1	0	0	1
KPMC	0	0	0	1	0	1
KIEEM	1	0	0	0	0	1
KLCC	0	1	0	0	0	1
KPDMC	0	1	0	0	0	1
Total	2	3	2	2	1	10

Firm *	C1.12 Performance measurements are set based on the company objectives and strategy: Crosstabulation				Total
	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	0	1	0	0	1
KLCC	1	0	0	0	1
KPDMC	1	0	0	0	1
Total	4	1	4	1	10

Firm *	C1.13 All managers are involved in the design and selection of performance measurements: Crosstabulation				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	0	1	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	0	1	1
KIEEM	0	1	0	0	1
KLCC	0	1	0	0	1
KPDMC	0	1	0	0	1
Total	1	4	3	2	10

Strategy implementation

Firm *		C2.1 The vision and mission of the organisation are communicated to all employees: Crosstabulation					Total	
		Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree		Strongly agree
Firm	KPPC	0	0	0	0	1	0	1
	KPGS	0	0	0	0	1	0	1
	KDM	1	0	0	0	0	0	1
	KCBM	0	1	0	0	0	0	1
	KIGM	0	0	0	0	0	1	1
	KRP	0	0	0	0	0	1	1
	KPMC	0	0	0	0	0	1	1
	KIEEM	0	1	0	0	0	0	1
	KLCC	0	0	1	0	0	0	1
	KPDM	0	0	0	1	0	0	1
	C							
Total		1	2	1	1	2	3	10

Firm *		C2.2 Company strategy is communicated to all employees: Crosstabulation					Total
		Strongly disagree	Disagree	Slightly agree	Agree	Strongly agree	
Firm	KPPC	0	0	0	1	0	1
	KPGS	0	0	0	1	0	1
	KDM	1	0	0	0	0	1
	KCBM	0	1	0	0	0	1
	KIGM	0	0	0	1	0	1
	KRP	0	0	0	0	1	1
	KPMC	0	0	0	0	1	1
	KIEEM	0	1	0	0	0	1
	KLCC	0	1	0	0	0	1
	KPDMC	0	0	1	0	0	1
Total		1	3	1	3	2	10

Firm *		C2.3 Employees are made aware of how individuals' and departments' performance affect the overall organisational performance: Crosstabulation			Total
		Disagree	Slightly disagree	Strongly agree	
	KPPC	0	0	1	1
	KPGS	0	0	1	1
	KDM	1	0	0	1
	KCBM	1	0	0	1
	KIGM	0	0	1	1
	KRP	0	0	1	1
	KPMC	0	0	1	1
	KIEEM	0	1	0	1
	KLCC	1	0	0	1
	KPDMC	0	1	0	1
Total		3	2	5	10

Firm *	C2.4 Employees are made aware of how their performance is linked to rewards and incentives: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	0	1	1
KIEEM	0	0	1	0	0	1
KLCC	0	0	0	1	0	1
KPDMC	0	1	0	0	0	1
Total	2	1	1	3	3	10

Firm *	C2.5 Company goals and objectives are clearly communicated to all employees: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	0	1	1
KIEEM	0	1	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	2	2	1	3	2	10

Firm *	C2.6 Employees are made aware of how their performance is evaluated (e.g. formula is used): Crosstabulation					Total
	Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	0	1	1
KIEEM	0	1	0	0	0	1
KLCC	0	0	0	1	0	1
KPDMC	0	0	1	0	0	1
Total	2	1	1	4	2	10

Firm *	C2.7 Performance measurement results and the processes used to get the measures are communicated to all employees: Crosstabulation					Total
	Strongly disagree	Disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	0	1	0	0	0	1
KLCC	0	1	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	1	3	1	4	1	10

Firm *	C2.8 Incentives for the fulfilment of objectives are clearly communicated to all employees Crosstabulation				Total
	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	1	0	0	0	1
KLCC	1	0	0	0	1
KPDMC	0	1	0	0	1
Total	4	1	4	1	10

Firm *	C2.9 The strategies set and measurements used in the company are available for all employees to see: Crosstabulation				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	0	1	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	0	1	0	0	1
KLCC	0	1	0	0	1
KPDMC	1	0	0	0	1
Total	2	3	4	1	10

Strategy evaluation

Firm *	C3.1 There is ongoing monitoring of organisational performance:				Total
	Crosstabulation				
	Disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	1
KPGS	0	0	0	1	1
KDM	0	1	0	0	1
KCBM	0	1	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	0	1	1
KIEEM	0	1	0	0	1
KLCC	1	0	0	0	1
KPDMC	0	0	1	0	1
Total	1	3	2	4	10

Firm *	C3.2 Employees are regularly evaluated on their performance: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	0	1	1
KDM	0	1	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	0	1	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	1	3	1	2	3	10

Firm *	C3.3 Organizational performance is analysed and reported graphically:					Total
	Crosstabulation					
	Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	1	0	0	0	0	1
KLCC	0	1	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	2	2	1	4	1	10

Firm *	C3.4 Regular feedback is given to employees regarding their performance:					Total
	Crosstabulation					
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	1	0	1
KDM	0	1	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	1	0	0	0	0	1
KLCC	0	1	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	1	3	1	3	2	10

Firm *		C3.5 Regular feedback is given to employees regarding the performance of their department: Crosstabulation					Total
		Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
	KPPC	0	0	0	0	1	1
	KPGS	0	0	0	0	1	1
	KDM	0	1	0	0	0	1
	KCBM	0	1	0	0	0	1
	KIGM	0	0	0	1	0	1
	KRP	0	0	0	1	0	1
	KPMC	0	0	0	1	0	1
	KIEEM	1	0	0	0	0	1
	KLCC	0	1	0	0	0	1
	KPDMC	0	0	1	0	0	1
Total		1	3	1	3	2	10

Firm *		C3.6 Regular feedback is given to employees regarding the performance of the organisation as a whole: Crosstabulation					Total
		Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree	
Firm	KPPC	0	0	0	0	1	1
	KPGS	0	0	0	1	0	1
	KDM	0	0	1	0	0	1
	KCBM	1	0	0	0	0	1
	KIGM	0	0	0	1	0	1
	KRP	0	0	0	1	0	1
	KPMC	0	0	0	1	0	1
	KIEEM	1	0	0	0	0	1
	KLCC	0	1	0	0	0	1
	KPDMC	0	0	1	0	0	1
Total		2	1	2	4	1	10

Firm *	C3.7 Employees receive training, when needed, for continuous development: Crosstabulation					Total
	Strongly disagree	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	0	0	1	1
KPGS	0	0	0	1	0	1
KDM	0	1	0	0	0	1
KCBM	1	0	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	0	1	1
KIEEM	0	0	1	0	0	1
KLCC	0	0	0	1	0	1
KPDMC	0	1	0	0	0	1
Total	1	2	1	3	3	10

Firm *	C3.8 Employees receive rewards and incentives based on their performance: Crosstabulation				Total
	Strongly disagree	Disagree	Agree	Strongly agree	
KPPC	0	0	0	1	1
KPGS	0	0	1	0	1
KDM	0	1	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	0	1	1
KPMC	0	0	0	1	1
KIEEM	0	1	0	0	1
KLCC	0	0	0	1	1
KPDMC	0	1	0	0	1
Total	1	3	1	5	10

Strategy reformulation

Firm *	C4.1 Performance measures are modified whenever company objectives change: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	0	1	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	1	0	1
KIEEM	1	0	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	0	1	0	0	1
Total	3	1	1	4	1	10

Firm *	C4.2 Feedback from performance measurement is used to reformulate or revise strategies, when and where necessary: Crosstabulation				Total
	Disagree	Slightly disagree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	0	1	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	1	0	1
KPMC	0	0	1	0	1
KIEEM	1	0	0	0	1
KLCC	1	0	0	0	1
KPDMC	0	0	1	0	1
Total	3	1	5	1	10

Firm *	C4.3 After evaluation of the strategies, actions (e.g. diversification, opening new markets, outsourcing etc) are taken, if indicated as necessary/desirable: Crosstabulation					Total
	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	0	1	0	1
KPGS	0	0	1	0	0	1
KDM	1	0	0	0	0	1
KCBM	0	1	0	0	0	1
KIGM	0	0	0	0	1	1
KRP	0	0	0	1	0	1
KPMC	0	0	0	0	1	1
KIEEM	1	0	0	0	0	1
KLCC	1	0	0	0	0	1
KPDMC	0	0	0	1	0	1
Total	3	1	1	3	2	10

Firm *	C4.4 Areas that require special focus are identified and new strategies are set: Crosstabulation				Total
	Slightly disagree	Slightly agree	Agree	Strongly agree	
KPPC	0	0	1	0	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	1	0	0	0	1
KIGM	0	0	0	1	1
KRP	0	0	0	1	1
KPMC	0	0	0	1	1
KIEEM	1	0	0	0	1
KLCC	0	0	1	0	1
KPDMC	0	1	0	0	1
Total	3	1	3	3	10

Section E Organisational performance

Firm *	E1.1 Average annual sales turnover for the past 5 years: Crosstabulation				Total
	R51m - R150m	R151m - R250m	R251m - R350m	>R350m	
KPPC	0	0	0	1	1
KPGS	0	0	1	0	1
KDM	1	0	0	0	1
KCBM	1	0	0	0	1
KIGM	0	1	0	0	1
KRP	0	1	0	0	1
KPMC	1	0	0	0	1
KIEEM	1	0	0	0	1
KLCC	1	0	0	0	1
KPDMC	1	0	0	0	1
Total	6	2	1	1	10

Firm *	E1.2 Percentage change in sales growth in the past financial: Crosstabulation			Total
	0%	1 - 10%	11 - 20%	
KPPC	0	0	1	1
KPGS	0	1	0	1
KDM	0	1	0	1
KCBM	0	1	0	1
KIGM	0	1	0	1
KRP	0	1	0	1
KPMC	0	1	0	1
KIEEM	0	1	0	1
KLCC	0	1	0	1
KPDMC	1	0	0	1
Total	1	8	1	10

Firm *	E1.2 I/D: Crosstabulation		Total
	Increase	Decrease	
KPPC	1	0	1
KPGS	1	0	1
KDM	0	1	1
KCBM	0	1	1
KIGM	1	0	1
KRP	1	0	1
KPMC	1	0	1
KIEEM	0	1	1
KLCC	0	1	1
Total	5	4	9

Firm *	E1.4 Current ratio in the past financial year: Crosstabulation			Total
	<1	1 - <2	2 - 3	
KPPC	0	0	1	1
KPGS	0	1	0	1
KDM	1	0	0	1
KCBM	1	0	0	1
KIGM	0	1	0	1
KRP	0	1	0	1
KPMC	0	0	1	1
KIEEM	1	0	0	1
KLCC	1	0	0	1
KPDMC	0	1	0	1
Total	4	4	2	10

Firm *	E1.5 Acid / Quick Ratio in the past financial year:		Total
	Crosstabulation		
	<1	1 - <2	
KPPC	0	1	1
KPGS	0	1	1
KDM	1	0	1
KCBM	1	0	1
KIGM	0	1	1
KRP	0	1	1
KPMC	0	1	1
KIEEM	1	0	1
KLCC	1	0	1
KPDMC	0	1	1
Total	4	6	10

Firm *	E1.6 Percentage change in operating profit margin in the past financial year : Crosstabulation				Total
	0%	1 - 5%	6 - 10%	11 - 15%	
	KPPC	0	0	0	
KPGS	0	0	1	0	1
KDM	0	1	0	0	1
KCBM	0	1	0	0	1
KIGM	0	1	0	0	1
KRP	0	1	0	0	1
KPMC	0	1	0	0	1
KIEEM	1	0	0	0	1
KLCC	0	1	0	0	1
KPDMC	0	1	0	0	1
Total	1	7	1	1	10

Firm *	E1.6 I/D: Crosstabulation		Total
	Increase	Decrease	
KPPC	1	0	1
KPGS	1	0	1
KDM	0	1	1
KCBM	0	1	1
KIGM	1	0	1
KRP	1	0	1
KPMC	1	0	1
KLCC	0	1	1
KPDMC	1	0	1
Total	6	3	9

APPENDIX J – PERMISSION / GATEKEEPERS LETTERS



CK1997/045765/23

491 Sydney Road
DURBAN
4000

P O Box 374
UMBOGINTWINI
4120

Tel: 031 205 9878
Fax: 031 205 9809

Email: devante@telkomsa.net

7 April 2016

PERMISSION TO CONDUCT RESEARCH STUDY

I, Mrs Lynette Kane, have given Ms Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu-Natal.

MRS LB KANE
MEMBER



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P.O. Box 1221, Durban 4000 Tel. (031) 205 4271, Fax. (031) 205 5681

30 September 2019

Permission to conduct study

I, Imtiaz Hoosen, have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**

Yours sincerely,

(Director)

Directors: J.S. Bronner, I.G Hoosen, L.M Hilliard-Lomas, J.M Purchase (Company Secretary)

W. N. 1000/01/2019



14 April 2016

Permission to conduct study

I, Viran Doorsamy, have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal.**

Viran Doorsamy
Sales Manager



Direct Tel: 031 713 1550 • Fax: 031 702 8951 • Tollfree: 031 713 1550

• Call: 0726720001
Email: doorsamyv@peterspapers.co.za • Website: www.peterspapers.co.za

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Fax: (031) 7057586

30 September 2019

Permission to conduct study

I, Mr Jeffrey Cutler, have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**


Yours sincerely

(Director / CEO)




HEAD OFFICE
Unit 20/21 Savannah Park
2A Sneezeewood Park
Glen Amd, Durban - 4051
P.O. Box 19083,
Dormerton 4015
Telephone +27 31 5692918/9
5318044/5/6
Fax +27 31 5694576
Email - admin@vanson.co.za
cape@vanson.co.za

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9 Crown Industrial Park,
Mineral Crescent
Crown, Johannesburg 2092
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Crown Mines, Johannesburg 2025
Telephone +27 11 8300411/2/4
Fax +27 11 8300415

CAPE TOWN
Unit 25 & 26 Viking Place,
26 Thor Circle, Thornton
Cape Town, 7460
P.O. Box 151
Eggen Duij 7475
Telephone +27 21
Fax 027 21 5318047
Email :

30 September 2019

Permission to conduct study

I, Lushanderan Moodley, have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**

Yours sincerely

Lushanderan Moodley
(Director)

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P.O. Box 1520
Wandsbeck
3631

30th September 2019

Permission to conduct study

I Peter Jeffrey Rudder have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in Kwazulu Natal.**

Members: P.J. Rudder B.L. Munro

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30 September 2019

Permission to conduct study

I, Carl von der Decken., have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu Natal**

Yours sincerely

C von der Decken (Member)

.....
(Director / CEO / Executive Manager)

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12 April 2016

PERMISSION TO CONDUCT RESEARCH STUDY

I, Ernest Barry Roberts, have given Ms Eddeline Maposa permission to conduct a research study for her degree at our organisation. The title of the study is: The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on manufacturing companies in KwaZulu-Natal.

Yours sincerely

^A
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TEL: 031-7009031

Email: pezula@telkomsa.net

30 September 2019

Permission to conduct study

I, Pingla Maharaj....., have given Eddeline Maposa permission to
conduct a research study for her degree at our organization. The title of the study is:
**The role of strategic performance measurement systems on overall strategy and
organisational performance: A focus on manufacturing companies in KwaZulu
Natal**

Yours sincerely

(Director / CEO)

21 October 2019

Permission to conduct study

I, Neville Naguran, have given Eddeline Maposa permission to conduct a research study for her degree at our organization. The title of the study is: **The role of strategic performance measurement systems on overall strategy and organisational performance: A focus on KwaZulu Natal**

Yours sincerely

Financial Manager

APPENDIX K: TURNITIN REPORT

Eddeline - Final Thesis

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