Applying management accounting techniques in risk management: A case study of Fedan investment limited, Lagos, Nigeria.

APPLYING MANAGEMENT ACCOUNTING TECHNIQUES IN RISK MANAGEMENT: A CASE STUDY OF FEDAN INVESTMENT LIMITED, LAGOS, NIGERIA

By

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DECLARATION

I, **James Enyinnia Aghachi**, hereby declare that the dissertation submitted for the degree, M-Tech Cost and Management Accounting, at the Tshwane University of Technology, is my own original work and has not been previously submitted to any other institution of higher learning. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

_________________________________ Date:

[redacted]

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ABSTRACT

Fedan Investment Limited, a Nigeria based company, is engaged in the production (through partner firms overseas) and distribution of branded phone accessories and other products. The complex and competitive nature of its operating environment makes risk management a challenging task. Thus, the company seeks to adopt more visible and transparent measures that will improve its risk management capabilities and engender greater organisational legitimacy. This study sought to describe in this regard how the risk management process of the company could be improved within the context of the application of management accounting techniques. A wide range of related literature was reviewed as a background for the study, and a mix of structured questionnaires and interviews with the operational and senior level managers of the company provided the primary data source. Related themes emerging from the analysis of the responses were categorised in respect of the research questions posed for the study. The findings suggest that relevant management accounting techniques, developed and adapted to the company's size and complexity of operation, will improve the ability of its management to identify, assess and mitigate the significant risks associated with the business operations of the company.

Keywords: enterprise risk management, management accounting techniques, management control, risk, risk management, risk management process, SMEs

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LIST OF ABBREVIATIONS

BSC	Balanced scorecard
CFO	Chief Finance Officer
CRO	Chief Risk Officer
CVP	Cost-volume-profit
ERM	Enterprise risk management
IASB	International Accounting Standard Board
IFRS	International Financial Reporting Standard
KPI	Key performance indicator
MAPs	Management accounting practices
MAS	Management accounting system
MCS	Management control system
PMS	Performance measurement system
SMEs	Small and medium-sized enterprises

CHAPTER 1

OVERVIEW AND RELEVANCE OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

This study examined the application of management accounting techniques in improving the risk management process of Fedan Investment Limited, Lagos, Nigeria (hereafter Fedan). Fedan is a medium-sized enterprise in terms of the employment criteria set in the national policy on micro, small and medium enterprises (Small and Medium Enterprises Development Agency of Nigeria [SMEDAN], 2015:12). Fedan is a major dealer in phone accessories and other categories of products (Fedan Investment Limited, 2020), manufacturing through partner overseas firms and distributing the same to its numerous customers through distributorship arrangements and retail outlets located within and outside Lagos. The enterprise manages these activities through operational units such as Purchases, Inventory, Accounts, Sales, Logistics and Internal Audit.

The operational processes include product development and designs, placement of production orders, import and delivery processing, clearing goods on arrival, transportation and other logistics, taking delivery at the warehouses/stores and reconciliations. In addition, defects correction and product improvements; payments and supplier account reconciliations; sales and supply to customers and branches; customers payments, branch remittances and account reconciliations; human resources management; managing operational expenses and other payments; funding management, cash and bank reconciliations, etc. are carried out. These processes are associated with varying degrees of complexity, which in combination with the volatile operating environment exposes Fedan to various risks that include decreased product life-cycle, discriminating customer demands and the effect of stiff competition, all of which increase the likelihood of obsolescence of inventory items. Other issues include internal control limitations, limitations in the generation of management accounting information due to complexities in operations, potential deficiencies in the actions of managers and other employees, system and IT failures, and changes in government policies.

Therefore, it has become imperative for Fedan to improve upon its processes for the effective management of all the risks inherent in its operation in order to ensure its survival in the highly competitive market and a fragile economy. It is certain that the global business environment has become increasingly dynamic in nature in recent years, and the complexities associated with these changes have made risk management a core function in the organisational process (Rasid, Isa & Ismail, 2014:129; Sithipolvanichgul, 2016:1-2). Thus, making proactive decisions, although very challenging, has become an essential requirement for business survival. For this reason, Culasso, Broccardo, Manzi and Truant (2016:7) argue that management control systems (MCSs), and in particular management accounting practices (MAPs), must evolve in this direction to support timely decisions, particularly in situations of high uncertainty and risk. The authors posit that this adaptation can be viewed from the perspective of managers adopting the traditional management accounting tools and using a wide range of performance measurement systems (PMSs) that integrate both financial and non-financial measures to identify, measure and mitigate the risks associated with the strategic objectives of their organisations (Culasso *et al*., 2017:7). In his definition of management accountancy, Batty (1963:1) highlights the role of MAPS in supporting and enhancing the managerial task of maximising profits or minimising losses.

In the context of this study, risk management includes managing the upside risks, implying taking advantage of possible opportunities to maximise value. Management accounting techniques or practices refer to the various types of management accounting information, systems and analytical procedures that are applied by organisations for planning and control purposes (Armitage, Webb & Glynn, 2016:32). This study explored the interrelationship between risk management and management accounting and control to recommend practical improvements in the risk management process of the case company.

1.2 BACKGROUND LITERATURE REVIEW

Risk management has developed from three distinct areas (occupational health and safety, insurance, and hedging of financial risks) to become a cornerstone of good governance and a regulatory resource in both the private and public sectors (Soin & Collier, 2013:82). This development of risk management function is evident in risk-based regulations such as the Sarbanes-Oxley Act of 2002 in the United States, the Corporate Governance Code of the United Kingdom, the Basel Accords, the framework implemented by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), the adoption of ISO 31000 as the international risk management standard, and similar frameworks that have been established in other countries (Collier & Agyei-Ampomah, 2008:4; Soin & Collier, 2013:82).

These regulations were adopted in response to the widely reported corporate scandals and failures in the early 2000s (Uyar, Gungormus & Kuzey, 2017:10). These scandals (including the 2008 financial crisis), described as risk management failures, had devastating consequences for the stakeholders of the companies involved and threatened the survival of interconnected global economies (Lam, 2014:69). Accordingly, the interest of various stakeholders regarding risk and the applicable risk management systems has intensified in recent times. This interest is believed to be the basis for the expansion in the scope of risk management function beyond issues of narrow concern by finance or accountants financial statement disclosures, to become activities embedded in the management control process, an area that is considered to fall within the premise of management accounting (European Network for Research in Organisational & Accounting Change, 2016:62; Soin & Collier, 2013:82).

Soin and Collier (2013:32) posit that little has been published on the interrelationship between risk, risk management, and management accounting and control practices and call for more research on the subject area to fill the knowledge gap in management accounting literature. Moreover, the recent call for contributions, discussions and debates in the subject area reveal valid gaps both in practice and in management accounting (European Network for Research in Organisational & Accounting Change, 2016:62-63). Therefore, the theoretical interrelationship between management accounting practices and risk management function (see Chapter 2 for a full literature review) is explored in this research work (single case) to describe how Fedan can improve its risk management process.

Management accounting function is viewed in this study from the perspective of the use of managerial accounting information and systems to support [1] risk mitigation and control measures (minimise the likelihood of value losses), and [2] the process of identifying and taking advantage of opportunities to maximise value.

1.3 RESEARCH PROBLEM

Fedan's business processes are associated with varying degrees of complexity, which in combination with the volatile operating environment exposes it to various risks, and failures in properly addressing these risks could have serious consequences on Fedan's survival as a growing company (Global Risk Alliance, 2005:9-10). Moreover, the management accounting system of the company still suffers limitations in terms of sufficiency of scope, integration and timeliness of the information output. To this end, the company is struggling in its effort to develop appropriate measures that will improve its management processes and facilitate effective and efficient management of the significant risks inherent in its operations.

The challenges could thus be identified in how the company's risk management concerns could be addressed from the perspective of developing the company's management accounting system to a level where the information output is broad based, integrated, aggregated and provided in a timely manner. This area of study, the risk management function from the perspective of management accounting, has remained an area where more research attention is required.

1.4 RESEARCH QUESTIONS

To address the research problem adequately, the following questions needed to be addressed:

1. What are the risks that are inherent in the operations of Fedan?
2. What are the processes involved in managing these risks?
3. What are the applicable management accounting techniques?
4. In what ways can the management accounting techniques be applied to improve the risk management process of Fedan?

1.5 OBJECTIVES OF THE RESEARCH

1.5.1 Primary objective

The primary objective of the current study is as follows:

To describe by means of the analysis of relevant information from related literature and empirical data how Fedan's risk management process could be improved within the context of the application of management accounting techniques.

1.5.2 Secondary objectives

The secondary objectives of the current study are as follows:

- To ascertain the nature of Fedan's management control system and assess the level of application of the management accounting techniques

- To define and classify all significant risks inherent in the operation of Fedan
- To ascertain the existing risk management processes or measures and to assess their effectiveness or adequacy
- To undertake a comprehensive literature review on management accounting and risk management as a background study to support the analysis of the empirical data in describing how management accounting techniques can be applied to improve Fedan's risk management process.

1.6 RESEARCH SCOPE AND SIGNIFICANCE OF THE STUDY

The refocused and intensified interest on risk and the nature of systems that operate to manage risk is apparently driven by the wide coverage of many tragic corporate failures that have threatened the stability of the global economy, and this is attracting significant attention in the management accounting literature (European Network for Research in Organisational & Accounting Change, 2016:62-63). Thus, risk management has developed into a core corporate function, involving activities that cannot be clearly separated from the MCSs. It is believed that management accounting systems, as predominant MCSs, are evolving in this direction to support risk-oriented decisions, particularly in regard to value protection and value maximisation.

While risk and risk management have become important subjects in management accounting research, minimum attention has been given to risk management and management accounting systems (MASs) in small and medium-sized enterprises (SMEs), particularly in developing countries. Moreover, the survey method has been applied in most of the studies relating to SMEs, thus leading to the dearth of in-depth information and studies employing the case study approach to risk management and MASs in SMEs. Fedan Investment Limited is a fast-growing company that qualifies as a medium-sized enterprise in accordance with the employment threshold stated in the national policy on micro, small and medium enterprises (SMEDAN, 2015:12). This study explored the interrelationship between risk management and management accounting and management control practices to reflect on the positive role that management accounting can play in bringing practical improvements to the risk management process of Fedan Investment Limited.

The research was limited to the analysis of the views and perceptions of Fedan's operational and senior-level managers regarding the application of management accounting techniques in improving Fedan's risk management process. The review of existing literature to provide a background for the analysis focused on management accounting techniques and risk management.

1.7 DATA COLLECTION METHODS AND ANALYSIS

1.7.1 Primary sources

To provide for the comprehensive description of how Fedan's risk management process could be improved within the context of the application of relevant management accounting techniques (Ben-Eliyahu, 2014), the researcher conducted interviews with selected members of the senior management of Fedan who are considered information-rich by virtue of their positions, qualifications and years of experience. Those interviewed indicated their interest in the study and offered to participate. This approach provided the researcher with the opportunity to obtain broad and in-depth information on Fedan's management control system, its application of management accounting techniques and its risk management process. In addition, information relevant to how management accounting techniques could be applied to improve Fedan's risk management process was gained. Interviews or focus groups provided opportunities for follow-up and probing questions, which were potentially useful in gathering rich descriptive evidence (Armitage, Webb & Glynn, 2016:32).

Before approaching the participants for the interview sessions, the researcher administered structured questionnaires to Fedan's operational and senior-level managers to ascertain the management control system that is in place, to determine the extent of application of management accounting techniques and to assess Fedan's risk management culture. These managers are actively involved in Fedan's policy-making, implementation and monitoring processes. The researcher considered the use of questionnaires beneficial in providing specific leads for interviewing select members of senior management.

Conclusions were drawn from the analysis of the data obtained through the research questionnaires and interview sessions, and recommendations were made on how Fedan can improve its process of managing risks within the context of the application of appropriate management accounting techniques. Please refer to Chapter 3 for a detailed discussion of the research methods.

1.7.2 Secondary sources

Sources of secondary data included academic textbooks, completed dissertations and theses and related studies published in academic journals or presented at conferences. Other sources involved standards and Internet web pages. Most of the publications were located through the library database of Tshwane University of Technology and a journal paper search using Google Scholar. The information obtained provided the theoretical background for the study and a basis for the analysis of the primary data.

1.8 RESEARCH ETHICS

Approval to conduct the research was sought and obtained from the case company. The instruments used for data collection (the interview content and the questionnaires) were processed through the Ethics Committee of the Tshwane University of Technology for review and clearance. Ethical clearance was obtained, and the appropriate consent was sought and obtained from the research participants before the questionnaire administration and interview sessions. As required by the ethical provisions of the university, the rights and confidentiality of the research participants were protected. Prior to participation, each participant was provided with the following details:

- The purpose and scope of the study
- The statement regarding voluntary participation and the right of the participant to withdraw at any stage without cost, penalty or any future disadvantage

- The researcher's commitment and assurance of preserving the anonymity and the confidentiality of the participant at all times, including when the research results are published in academic journals or presented at conferences
- Assurance of compliance with internationally accepted ethical principles in all aspects of the study
- Contact information for questions regarding the ethical aspects of the study and for reporting serious unethical behaviour

The interview date and time were determined by the participants to avoid undue interference with their office functions. Thereafter, each interview was held privately in the participant's office. Moreover, the researcher was guided by the following ethical considerations during the design and in the course of conducting the study and reporting the outcome:

- Complying with the recognised standards of scientific competence required for this type of research
- Ensuring that personal bias does not affect the conduct and the outcome of the study
- Ensuring there is no plagiarism

1.9 DISSEMINATION OF THE STUDY RESULTS

The researcher will present the results of this study to Fedan and make copies of the research available for each major participant. Moreover, the researcher plans to present papers at academic conferences and publish abridged contents of the research in an accredited journal.

1.10 OUTLINE OF THE STUDY

Chapter 1: This chapter provides an overview and indicates the relevance of the study. The research problem and scope are introduced and clearly defined in the chapter together with background literature supporting the research and the methodology applied in investigating the problem.

Chapter 2: Information from related journal articles, textbooks and other sources that were selected based on their relevance to the study subject are reviewed in this chapter and form the theoretical basis for the study. The outcome of the review is associated with the empirical evidence to describe how the risk management process of Fedan could be improved within the context of the application of management accounting techniques.

Chapter 3: In this chapter, the methodology as applied in this research work is discussed in detail. An overview of the data collection methods and the analysis is presented in Section 1.7 of Chapter 1.

Chapter 4: This chapter provides the analysis and interpretation of the research results. In Chapter 4, the information obtained from the administered questionnaires and interview sessions is analysed.

Chapter 5: This is the last chapter of the dissertation. The research findings are discussed, conclusions are drawn and recommendations are made.

1.11 DEFINITIONS OF KEY TERMS IN THE CONTEXT OF THE STUDY

The following key terms/definitions used in the study were adapted from the *CIMA Official Terminology* (2005), Lam (2014) and Drury (2018):

Cost accounting system: An accounting framework used by business entities to ascertain or estimate the costs of their products and services.

Cost-volume-profit (CVP) analysis: A technique applied in measuring the impact that varying levels of costs and volume have on operating profit.

Benchmarking: A means whereby an organisation ensures continuous improvements in its business operations by comparing its products, services and activities with those of other superior or best-performing organisations.

Functional analysis: The process of identifying and assigning values or prices (that reflect the customers' perspective) to each element or attribute of a product.

Risk: The likelihood of occurrence of any event that can adversely or favourably affect the objectives of the business.

Risk management: The function or the process of risk identification and treatment.

Enterprise risk management (ERM): A risk management framework that integrates and aligns risk management function with the business strategy and makes it part of the normal business operation rather than managing risk at the individual activity level.

Management accounting techniques, management accounting practices, management accounting systems, management accounting control systems: The terms are used interchangeably to describe management accounting information and the organisational information systems and methods that support the business decisions applied by organisations in their planning and control functions. They include costing and cost management systems, budgets, performance measures, information for decision-making and strategic analysis.

Strategic management accounting: A management accounting concept that reflects the significance of the consideration of information that relates to external factors, in addition to the internally generated financial and operational information.

Strategy: Represents the courses of action or means by which an organisation plans to accomplish its objectives.

Strategy—cost leadership: The strategy of competing based on lower selling prices through lowest cost of production achieved by means of economies of scale, advanced or superior technology, unique access to favourable raw materials prices, etc.

Strategy—product differentiation: The strategy of competing based on superior and unique products or services.

Strategy—focusing strategy: A strategy of seeking competitive advantage by identifying and focusing on narrow customer and market segments that have special or unique needs that are not properly met or addressed by other market or industry players.

Target costing: A cost-management technique that focuses on achieving a target product cost during the product planning and design stage. The target cost is derived by deducting a desired profit margin from the expected selling price.

Tear down analysis or reverse engineering: The decomposition and examination of a competing product in order to identify opportunities for product improvement and/or cost reduction.

Value analysis or value engineering: A systematic interdisciplinary examination of the elements, attributes or factors that influence the cost of a particular product or service in order to provide innovative ways of achieving the specified purpose or target cost without compromising the required standard of quality and reliability.

1.12 CONCLUSIONS

In this chapter, the research problem, the objectives of the study and the methods applied in the study are introduced. As an overview, the chapter demonstrates that the various risks inherent in the operation of a company originate from the complexities associated with the operation of the various aspects of Fedan and the nature of Fedan's business environment. Proper management of these risks in a transparent and visible manner that promotes organisational legitimacy has become an essential requirement for the survival of Fedan.

This study focuses on the application of management accounting techniques in improving the risk management process of the case company and the appropriateness of the qualitative research approach as applied in the study is thus introduced in this chapter. The theoretical basis for the study and the relevant findings in previous studies regarding managing risks within the context of the use of applicable management accounting techniques are discussed in detail in the following chapter.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The primary objective of this study (as discussed in the previous chapter) was to describe by means of a review of relevant information from related literature and the analysis of empirical data how the risk management process of the case company can be improved within the context of the application of management accounting techniques. This chapter thus presents the review of related literature that were selected based on their relevance to the study. The review is required for the following reasons: to provide a proper understanding of the subject, to eliminate the chance of duplicating existing studies, to establish the essence of this study by identifying gaps in the existing literature, and to provide support or modifications of findings already existing in the literature through sound analysis of the empirical data (Creswell, 2014:96-97; Roberts, 2010:85).

In this research work, the interrelationship between management accounting and risk management function is explored to describe how the risk management process of the case company could be improved. Although this interrelationship has remained an area where more research attention is required, the use of various management accounting techniques and specific performance measurement tools by organisations of different sizes has attracted considerable research interest in the last three decades (Armitage, Webb & Glynn, 2016:36; European Network for Research in Organisational & Accounting Change, 2016:62-

63; Rasid, Isa & Ismail, 2014:141; Soin & Collier, 2013:84). Thus, the availability of these studies presents an avenue to consider the appropriateness of applying certain MAPS in the risk management process of the case company.

Fedan Investment Limited qualifies as a medium-sized enterprise considering its number of employees in terms of the employment criteria set in the national policy on micro, small and medium enterprises (SMEDAN, 2015:12). Additionally, using the applicable employment benchmark in South Africa and in the European Union, the company also qualifies as a medium enterprise comparable with SMEs operating in developed countries (Berisha & Pula, 2015:19; European Commission, 2015:10; Maduku, Mpinganjira & Duh, 2016:712; Small Enterprise Development Agency, 2016:5). Although SMEs are also defined using financial criteria such as annual turnover and asset value, the number of staff has remained the most common criteria used (Berisha & Pula, 2015:18).

Risk management, the use of management accounting techniques and their application or potential relevance in the risk management process are reviewed in this chapter with particular emphasis on SMEs. Moreover, the case company operates in a developing economy and hence, the possible implications are also considered in the review (Maduku, Mpinganjira & Duh, 2016:712). The review, which includes a broad overview of risk management and a broad overview of management accounting techniques, is structured to address the research questions posed for the study.

Notwithstanding considerable overlaps in the structure, Section 2.2 primarily seeks to address the first cluster of the research questions (identification of risks associated with the company's operations and the processes involved in managing these risks). The second cluster of the research questions (the applicable management accounting techniques and their relevance in the risk management process) is considered in sections 2.3 and 2.4.

2.2 RISK MANAGEMENT, RISK MANAGEMENT PROCESS AND ITS APPLICATION IN ORGANISATIONS SIMILAR IN SIZE TO THE CASE COMPANY

2.2.1 Risk and risk management

2.2.1.1 Definition of risk

Risk is defined in ISO 31000 as the "effect of uncertainty on objectives" (International Organisation for Standardisation, 2018, para. 3). As defined by Gitman, Smith, Hall, Makina, Malan, Marx, *et al*. (2014:302), risk is "the variability of returns associated with a given asset" while return is "the total gain or loss experienced on an investment over a given period of time". From the above definitions, risk in relation to an investment or asset could be described as the likelihood of actual return differing with the expected return, the level being measured as a range or dispersion of possible outcomes.

The term 'uncertainty' appears often as an element in the definition of risk and is sometimes used interchangeably with risk. For example, risk has been broadly viewed as the uncertainty associated with potential outcomes, and it is deemed to consist of two elements: exposure and uncertainty (Becker & Smidt, 2016:150; Sydow & Frenkel, 2013:236). Although certain terms may be used interchangeably for risk and uncertainty, it is strongly argued that the two are not really synonymous in the sense that a relative level of probability is known for risk while uncertainty relates to events where the probability is not known (Pritchard & PMP, 2014; Rudasingwa, 2006; Sithipolvanichgul, 2016:16). According to the Chartered Institute of Management Accountants (2005:52), risk is “a condition in which the range of possible outcomes of an activity can be predicted” while uncertainty refers to “the inability to predict the outcome or range of outcomes of any activity due to absence of information” (ibid., p. 97).

The term ‘risk’ has also been defined as “a combination of the probability of an event and its consequences, which can range from positive to negative” (International Organization for Standardization, 2002:2-3). Risk is viewed mainly from the downside perspective; however, the term is not restricted to the downside of events but also includes opportunities termed “upside risk” that can be exploited by an organisation (Coleman, 2011:vii & 12).

It is important to note that the definition of the term ‘risk’ has elicited much debate in the academic circle, leading to the absence of a universally acknowledged definition (Becker & Smidt, 2016:150). Consequently, the academic perspective of the term ‘risk’ has ranged from viewing risk as the probabilities of adverse potential outcomes associated with uncertainties in the business environment to viewing risk as either the probabilities of positive variability of expected outcomes or the probabilities of negative variability of expected outcomes (ibid.). Hence, many authors, including several organisations, have offered varying definitions of the term ‘risk’. Therefore, it has been suggested that researchers need to be explicit in their context or perspective of the term ‘risk’ (Kaplan, 1997:407-417; Sithipolvanichgul, 2016:16).

In this study, the perspective of risk is oriented more towards the organisational context of the term, that is, the likelihood of variations in the achievement of the company's objectives (Sithipolvanichgul, 2016:17). Accordingly, risk events represent those probable events for which the occurrence or non-occurrence potentially affects (adversely or favourably) the company's ability to achieve its objectives. This context is consistent with the following definition offered in *Risk Management Guide for Small Businesses*. Risk is described in the guide as the likelihood of occurrence of any event that can adversely or favourably influence the objectives of the business (Global Risk Alliance, 2005:9). The objectives of a business, as defined in the guide (ibid.), are likely to include any of the following:

- Improve the productivity of its workforce
- Improve the quality of its products and render quality and competitive services
- Maximise and sustain the revenue level
- Reduce expenses as much as possible
- Achieve a high level of overall productivity and increase in market share

The impact of risk on the set objectives of an organisation can be either favourable (opportunity) or adverse (loss). Hence, the purpose of risk management is to minimise the possible adverse impact and ensure that opportunities are identified and harnessed to the advantage of the organisation (ibid., pp. 9-13). From the insight given in the guide cited above and considering the nature of its business, the relevant risks associated with the operation of Fedan Investment Limited will likely include the following:

- Product failures due to defects, obsolescence, and competitive pressures

- Disruptions in activities and revenue due to operational inefficiencies such as limitations in procedures, IT and other technical failures, human errors, mistakes and possible external factors.

2.2.1.2 Risk classifications

Because the number of risks confronting an organisation are usually too numerous to list, classification or grouping of similar risks (grouping risks in categories) is a more convenient way to identify, understand and manage the risks of a particular organisation. However, there is no single universally accepted way of classifying risks; rather, classifications vary according to the nature of the business operations and the organisation's industry (Collier & Agyei-Ampomah, 2008:108). Therefore, a variety of classifications has been adopted in relevant studies over the years to identify and understand the risks that confront organisations (Becker & Smidt, 2016:150).

Risks can be classified into two broad categories relating to their source or origin. These encompass risks that are internal, peculiar or specific to a particular organisation and over which control can be exercised (endogenous or firm-specific risks) and risks emanating from events that are external to the organisation (exogenous or systematic risks) over which control cannot be exercised (Becker & Smidt, 2016:150; Coleman, 2011:10; Hagigi & Sivakumar, 2009). The basic element in this categorisation is 'controllability'; hence, endogenous factors include the attitude of management and organisational practices.

According to Coleman (2011:10), this classification is important for the following two reasons. Firstly, the response to the two sources of risk will be quite different considering that firm-specific risks arise from within the firm and are mainly under the control of the firm and its managers who can, at best, adapt to the systemic risk environment (which is beyond their control) rather than work to alter it. Secondly, the impact of the two sources of risk is quite different. While a firm-specific risk disaster greatly affects the firm and the individuals involved, a systemic risk management disaster might have serious implications on the larger economy (Coleman (2011:10).

Following the same line of controllability is the result of field research conducted by Kaplan and Mikes (2012:50-51) in the area of risk management. The research shows that the first step in creating an effective risk management system is to understand the qualitative distinctions among the types of risks that organisations face. Risks fall into one of the following three categories: preventable risks, strategy risks, and external risks (i.e. dividing firm-specific risks into preventable and strategy risks). According to Kaplan and Mikes (2012:50-51), preventable risks (risks arising from the actions of employees and managers) ought to be eliminated or avoided since they are under the control of the organisation. They, however, posit that an organisation should always ensure a minimum zone of tolerance for defects or errors in personnel actions and processes because it may not make economic sense to achieve 100% elimination of such risks. The authors describe strategy risks as including the risks associated with an organisation's strategy and adopt the theory of 'higher risks for higher returns'. Organisations voluntarily take on and manage these risks in order to generate superior returns. Kaplan and Mikes (2012:50-51) further maintain that while a compliance-based approach is suitable for managing preventable risks, the approach must be broadened to include open and explicit risk discussions in order to manage strategy risks or external risks adequately.

Moreover, certain risks possess both external and internal drivers, overlapping the two broad categories. For management convenience, these risks can, therefore, be further classified, into types of risk such as operational risks, business risks, financial risks, compliance risks, reputational risks and the strategic risks adapted in the three categories described above (Collier & Agyei-Ampomah, 2008:108; Gitman *et al.*, 2014:303; Institute of Risk Management, 2002:2; Lam, 2014:31).

Operational risk is associated with the likelihood of failures in people's actions, systems or processes and includes external events, all of which adversely affect the operation of an organisation (Collier & Agyei-Ampomah, 2008:108; Gitman *et al.*, 2014:303; Institute of Risk Management, 2002:2; Lam, 2014:31). Business risk could be described as the likelihood of financial and operating results falling below expectations. Financial risk relates to the financial operation of a business. It is the likelihood of an organisation failing to generate enough cash flows to settle its financial obligations. The financial risk category includes credit risk, interest rate risk and foreign exchange risk (ibid.). Strategic risk relates to the likelihood of failures of corporate or business strategies (e.g. business restructuring, new product) or failures in the strategy execution. Compliance risk refers to the likelihood of failures in complying with laws and regulations, while reputation risk is associated with failures in effectively addressing other risks. In this study, risks that are associated with the business operation of Fedan

Investment Limited are considered from the perspective of business risks, operational risks, and strategic risks (ibid.).

As a developing concept in risk management, opportunity-based risk, uncertainty-based risk and hazard-based risk are described by Global Risk Alliance (2005:10) as three types of risk. This classification is associated with the specific characteristics of risks and the particular ways in which they can be managed. These three types of risk, as described in the risk management guide of Global Risk Alliance (2005), are explained below.

Opportunity-based risk refers to risks inherent in either taking advantage of an opportunity or foregoing the opportunity. This is similar to the strategic risk 'broad' classification given previously in this section. When an organisation identifies and takes advantage of an opportunity to increase wealth, it assumes the risks associated with such activity. Risk management requires putting mechanisms in place to reduce the likelihood of events occurring that can adversely affect the set objective of the business and minimising the adverse impact if those events occur. Examples of opportunities that come with risks include the expansion of the business operation, procurement of machinery, investment in IT and product diversification. It should also be noted that ignoring such opportunities could have serious consequences for the organisation concerned. This classification is consistent with the risk definition adopted for this study. It identifies both the downside and the upside aspects of risks. The management of opportunity-based risk requires a clear assessment of both aspects of the risk.

Uncertainty-based risk refers to the risk associated with natural disasters and other unexpected events such as tsunamis, earthquakes and terrorist attacks. The related risk-management approach includes disaster and emergency planning and business continuity planning.

Hazard-based risk can be addressed by applying occupational health and safety measures, mechanisms and programmes. This risk is associated with a source of danger or a potentially harmful situation. Hazard-based risks include physical hazards, chemical hazards, biological hazards, ergonomic hazards and psychological hazards.

The individual risks confronting an organisation are undoubtedly very many. Managing these risks in groups by applying similar controls to similar risks is preferable, especially in facilitating the design of appropriate internal control, in developing a sound risk-management system and in enabling the proper assignment of responsibilities (Collier & Agyei-Ampomah, 2008:108).

2.2.1.3 Risk management

The Institute of Risk Management (2002:2) defines risk management as "the process whereby organisations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities". Risk management is reflected in this definition as a core aspect of strategic management in any organisation that focuses on risk identification and treatment. The methodical approach in addressing risks (as shown in the definition) could be referred to as the risk management process of the particular organisation. Meanwhile, the "goal of achieving sustained benefit within each activity and across the portfolio of all activities" could be interpreted as the objective of a firm-wide or enterprise risk management (ERM) approach (Institute of Risk Management, 2002:2).

According to the Institute of Risk Management (2002:2), the following are the objectives and attributes of a good risk management system in an organisation:

- Risk management supports the creation of sustainable value across the range of business activities.
- Risk management facilitates the appreciation of the potential impact of all internal and external factors that can affect the business activities.
- Risk management reduces the likelihood of failure across the activity lines and increases the chances of the overall success of the organisation.

A risk management system should cover the organisation's entire strategic processes (formulation and implementation). In addition, continuous improvement of the system is required to ensure that risks identified in the organisation's past, present and specifically future activities are methodically addressed (Institute of Risk Management, 2002:2).

Risk management is defined in ISO 31000 as the "coordinated activities to direct and control an organisation with regard to risk" (International Organisation for Standardisation, 2018, para. 3). The essence of risk management implementation in an organisation is to ensure as far as possible that the potential adverse impact of risk exposures on the organisation is avoided or minimised, thereby preventing losses and securing the achievement of its objectives (Becker & Smidt, 2016:150).

The application of hedging techniques and conformance procedures to mitigate business losses is the traditional view of risk management (Collier & Agyei-

Ampomah, 2008:118). However, effective risk management beyond mere compliance procedures can place an organisation in a good competitive position (Becker & Smidt, 2016:150; Elahi, 2013).

2.2.2 Risk management process and its application in organisations of similar size to the case company

2.2.2.1 Risk management process

Promoting risk awareness based on the understanding of the nature of risk should be the starting point of any risk management process; the next steps involve measuring risks and implementing appropriate risk control mechanisms (Lam, 2014:36). Collier and Agyei-Ampomah (2008:5-6) posit that risk identification, assessment of risk impact, risk mapping, setting up a register for risks, risk evaluation, risk treatment and risk reporting constitute a seven-step process containing the essential ingredients of risk management.

According to Collier and Agyei-Ampomah (2008:5-6), risk management starts with a system of identifying the various risks confronting an organisation and can involve the collection of information from individuals, reports, observations or any other relevant sources to aid in the recognition of the individual risks confronting the organisation. This is followed by an impact assessment, which is quantifying the identified risks or estimating their financial implication. Risk mapping requires scaling the risks in order of their likelihood and impact to enable prioritising the most crucial risks. A register is required for the listing of identified risks together with the likelihood and possible impact of their occurrence. A risk register is maintained to ensure that risks are continually evaluated and managed. Risks are thereafter evaluated to ensure there is a tradeoff between risks and returns in relation to the organisation's appetite for risk. This evaluation is usually taken at board level and involves setting standards for determining whether particular risks should be accepted, rejected or managed in some way. Risk treatment involves taking actions in response to risks based on the organisation's risk-evaluation parameters. The response will come in the form of avoidance, reduction, transfer or acceptance of particular risks. Risk reporting highlights the significant risks, as identified and assessed, their treatment and post-treatment assessment. Risk before its treatment is termed 'gross risk, while 'net risk' refers to the residue of the risk after treatment or the introduction of controls.

2.2.2.2 Enterprise risk management

Managing risk involves the identification of risk, the assessment of its likelihood and the estimation of the potential impacts in addition to developing appropriate mitigation measures and deploying appropriate human and material resources to implement those measures (Berg, 2010:79). Business environment realities require a more integrated approach to risk management that aligns risk management with the business strategy and makes it part of the normal business operation rather than managing risk at individual activity levels or in functional silos (Berg, 2010:81; Collier & Agyei-Ampomah, 2008:119). This integrated approach, generally known as ERM, is a comprehensive process that is continuous, proactive and systematic in nature (Berg, 2010:81; Lam, 2014:53). This approach takes a firm-wide perspective in appreciation, management and communication of risks. It focuses not only on risk minimisation or mitigation but also includes the exploitation of opportunities through innovation (ibid.).

The most commonly adopted ERM framework is that of COSO (2004), which consists of the following eight interrelated components: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring (Committee of Sponsoring Organisations of the Treadway Commission, 2004:3-4; Rasid, Isa & Ismail, 2011:570).

The Committee's 2017 ERM framework (COSO, 2017) is more integrated than the 2004 framework and includes the strategic process, performance evaluation and managerial information communication, which are all linked to the MAS. The framework consists of the following: Governance and Culture; Strategy and Objective Setting; Performance; Review and Revision; and Information Communication and Reporting. These five interrelated components are described by COSO (2017:6) as follows:

- Risk governance reinforces risk ownership and accountability by organising the activities of the organisation and defining the areas of responsibility, which includes setting up structures that define the activities and areas of responsibility. Risk management culture promotes desired behaviours and risk awareness among member staff and defines the ethical values of the organisation.
- Strategy and objective setting refers to the development of a strategy and the setting of objectives according to a simultaneously (concurrently) established risk appetite that forms the basis for risk identification, assessment and response.

- Performance assessment and evaluation enables the identification and assessment of risks that potentially affect the achievement of the set objectives of the business. The risks are prioritised according to the likelihood and severity of possible economic consequences and reputational damage in order to determine the appropriate response and provide a risk report to relevant stakeholders.
- Review and revision: The reappraisal of performance and the associated indicators could inform a significant adjustment of performance parameters in line with changes evidenced in the internal and the external environment of the organisation.
- The implementation of ERM requires a continuous flow of information that is gathered internally and from outside sources. The information is communicated up and down and across the functional cadre of the organisation in a well-sustained process.

Regarding the applied ERM framework, some organisations, especially in the financial sector and other risk-intensive businesses, have risk management departments and risk management positions such as the Chief Risk Officer (CRO) that are considered indicators of ERM implementation (Collier & Agyei-Ampomah, 2008:118; Lam, 2014:57-58; Rasid, Isa & Ismail, 2011:579). However, Lam (2014:53) argues that each organisation can determine how they will implement ERM since the approach is still developing with no universally accepted standardised format for its implementation. Moreover, risk management is ultimately the responsibility of management and is too important a role to be delegated (Coleman, 2011:3). Therefore, the implication of this approach for varying sizes and structures of organisations is that of adaptability since each organisation can adopt an ERM definition and framework that is suitable for their business scope and complexity (Lam, 2014:53).

Risk management, which is the process of understanding and managing the risks of an organisation, is considered best defined within the context of ERM (Collier & Agyei-Ampomah, 2008:5). Therefore, the management of risks relevant to the case company is considered in this study from the perspective of ERM. Enterprise risk management can be implemented in any organisation (small, medium and large) that requires processes that will enable continued holistic consideration of risks along its strategic (long-term) and short-term objectives (Committee of Sponsoring Organisations of the Treadway Commission, 2017:3). The experiences and knowledge drawn from past internal control processes of an organisation usually inform the structure of the design and the implementation of an ERM framework for that organisation (Sithipolvanichgul, 2016:23).

2.2.2.3 Risk management in small and medium-sized enterprises

Regardless of the entity, risk management functions to ensure that risks are maintained within an acceptable range while the firm operates to achieve its objectives (Lam, 2014:37; Watkins, 2012:6326-6327; Yusuf & Dansu, 2013:83). Hence, risk management concepts and principles are applicable across enterprises (small, medium and large) (ibid.). However, the level of formalisation and complexity of their application varies according to size of the firm, ownership and management structure, regulation and risk orientation of management (ibid.).

According to Global Risk Alliance (2005:43), the level of formalisation of risk management can be intuitive, planned or calculated:

- The intuitive process is an informal process whereby the business chief executive relies on intuition to manage risks. Thus, formal documentations are rarely used. This is usually the case when an organisation is in a critical situation or is operating in a highly volatile environment.
- The planned process involves the application of a documented procedure or steps (defined as the risk management process of the organisation) to identify and assess risks and to proffer appropriate mitigation measures. This process requires information, experience and the right judgement.
- The calculated risk management process is beneficial for activities where significant resources are involved and input is required from other stakeholders. The process requires research and extensive data collection and can involve the engagement of professionals. This process is applicable to emergency management and business continuity plans.

The growth of an organisation and the expansion of its activities in terms of an increase in the number of employees require a commensurate level of formalisation of the organisation's structures and systems to provide for guidelines, implementation of policies and proper supervision of activities. Hence, the level of risk management formalisation should reflect the complexity of the business operation as defined by the organisation's size in terms of number of staff (Global Risk Alliance, 2005:45). This implies that medium-sized organisations should operate at a higher level of formalisation than small and micro businesses.

Nevertheless, the risk function in an SME is wholly at the discretion of its chief executive (Watkins, 2012:6327; Yusuf & Dansu, 2013:82). Thus, his/her management skills and attitude towards risk defines the risk management culture of the enterprise. Therefore, especially in the area of risk identification, measurement and control, managers of SMEs require managerial skills and knowledge to be able to design and implement an effective risk management strategy in their enterprises. However, the owner can outsource the risk management function or assign it to competent personnel (ibid.).

Risk management in SMEs should be of great interest for SME owners/managers, government and other stakeholders, particularly because of the sensitivity of the size factor to various risks, the need to make their operations sustainable and the usefulness of SMEs as seedbeds for economic growth and development (Watkins, 2012:6327; Yusuf & Dansu, 2013:77). However, according to the literature, the risk management system for SMEs has not received much attention despite the consensus on the roles of SMEs in economic development (Yusuf & Dansu, 2013:82). According to Falkner and Hiebl (2015:6), the dearth of research on the risk management systems for SMEs in developing countries is more pronounced when considered in relation to developing countries. The authors argue that risk management qualifies as a key factor that can reduce the likelihood of SME failure and thus called for more research in the risk management of the SME subsector in developing economies. As a contribution to the literature on risk management in the SME sub-sector, a case of a medium-sized enterprise operating in a developing country is used in this study to describe how the risk management process could be improved within the context of the application of relevant management accounting techniques.

2.3 MANAGEMENT ACCOUNTING TECHNIQUES FOR THE RISK MANAGEMENT PROCESS OF ORGANISATIONS OF SIMILAR SIZE TO THE CASE COMPANY

2.3.1 An overview of management accounting: A risk management perspective

Risk management is fast becoming a core function in the managerial process due to the increasing competition and complexities associated with the global business environment and the need for business survival and sustainability (Institute of Risk Management, 2002:2; Power, 2013; Rasid, Isa & Ismail, 2014:129; Sithipolvanichgul, 2016:1-2). Organisations are becoming more aware of various internal and external variables that can contribute to their success or failure, hence the increasing effort to develop the ability to predict both the adverse and the favourable outcomes associated with risk events, to measure their potential impacts and to initiate mitigation and control measures in a proactive manner (Coleman, 2011:3; Sithipolvanichgul, 2016:1).

This rising significance of risk management reflects much in the expansion of its scope beyond issues of narrow concern by finance (calculation of value at risk, use of derivatives, etc.) or accountants (financial statement disclosure, etc.) to activities embedded in the management control process (European Network for Research in Organisational & Accounting Change, 2016:62; Soin & Collier, 2013:82). Thus, an objective and a conscious risk management effort on the part of business owners and managers is increasingly becoming a core requirement for good business governance (Beller, 2018:36; Terungwa, 2012:9; Yusuf & Dansu, 2013:76). Beyond the application of quantitative tools to measure risk, risk management is broadly the art of managing people, business processes and institutions and can be practically associated with the strategic and tactical processes of an organisation (Coleman, 2011:1).

In view of the rising risks inherent in the business environment, making quick and sound decisions has become both an essential requirement and a challenging task for managers. Accordingly, Culasso *et al.* (2016:7) posit that MCSs and practices must evolve in this direction in order to enhance managerial abilities. The authors maintain that MAPS, as an important part of the managerial control systems, must be adapted to support timely decisions, particularly in situations of high uncertainty and risk (Culasso *et al.*, 2016:7). Some studies have viewed this adaptation from the perspective of managers adopting the traditional management accounting tools and using the integration of financial and non-financial indicators as provided in various PMSs to identify, measure and mitigate the risks associated with the strategic objectives of their organisations (Culasso *et al.*, 2016:7).

Management accounting has evolved from its first stage prior to 1950, when the focus was on cost determination and financial control, to the period 1985–1995, when the focus was on value creation through effective use of resources, and to the present day where emphasis is on value at risk in the strategic process (Rasid, Isa & Ismail, 2014:130). Accordingly, the planning and control function of a MAS encompasses resource management, creation and preservation of value (Jha, Ubale & Jani, 2015:2). These value-creation and value-preservation perspectives of MASs are consistent with the risk management definition adopted in this study (see Section 2.2.1). The value creation and the value preservation functions entail the use of accounting methods, systems and techniques such as financial accounting, cost accounting, budgetary control and statistical techniques as risk management mechanisms (upside risk and downside risk management measures) to provide managerial information that enhances the ability of an organisation to achieve its objectives (Batty, 1963:6-8; Jha, Ubale & Jani, 2015:2).

Thus, the application of these systems and techniques in the managerial process of an organisation could be described as **management accounting systems, management accounting techniques** or **management accounting practices** (Armitage, Webb & Glynn, 2016:32; Azudin & Mansor, 2018:223; Maziriri & Mapuranga, 2017:15; Rasid, Isa & Ismail, 2014:128). These terms are used interchangeably in this study, as in management accounting literature (cp. Abdel-Kader & Luther, 2008; Drury, 2012:20; 2018:19).

A MAS by design should provide relevant and sufficient information for efficient resource allocation and for decisions associated with the introduction of new products or services and the measurement of performance (Rasid, Isa & Ismail, 2011:576). This information can be adapted to identify, measure and control risks according to the strategic objectives of the organisation (Coleman, 2011:1; Culasso *et al.*, 2016:7). Management accounting systems can also be described as 'management control systems' or specifically as 'management accounting control systems' (see Section 2.4.1 for details).

2.3.2 The growing relevance of management accounting practices in the risk management function

Different aspects of risk management have attracted much attention in management accounting research, particularly following the recent global financial crisis that led to the emergence of various risk-based regulations such as the Sarbanes Oxley Act of 2002 in the United States (Fleischman, Johnson & Walker, 2017:114; Mikes, 2009; Miller, Kurunmäki & O'Leary, 2008; Mohamed Metwally, 2017; Quon, Zeghal & Maingot, 2012; Soin & Collier, 2013). In a study of the relationship between MAS, ERM and organisational performance, Rasid, Isa and Ismail (2014:128) examined the management accounting information characteristics that support the implementation of ERM and the ultimate effect on organisational performance. Their findings highlighted how the MAS and the ERM complement each other in the management control process and the ultimate effect on performance. Significantly, the result from the survey of about 72 financial institutions in Malaysia shows that timely, broad-based and integrated management accounting information is required to implement ERM successfully (Rasid, Isa & Ismail, 2014:131). Therefore, these information characteristics should be considered when designing a MAS in order to provide support and enhance the ERM process. The relevance fit of these management accounting information characteristics is described as follows:

- Integrated and aggregated future-oriented financial and non-financial information, including information from external sources, provided by the MAS of the organisation can be applied to measure and mitigate operational risks and market and credit risks (e.g. risk-based pricing).
- In banks where risk-based pricing is practised, the risk of non-repayment of loans is assessed by making projections on the paying behaviour of customers. Accordingly, lower risk customers pay less interest for the same loan amount. (This is also applicable in other businesses where discounts on standard prices vary according to the assessed customers' risk of

non-payment.) This assessment and varied charges, however, require broad-based and objective MAS information.

- The concept of time relevance of information is critical in risk management, especially during a crisis period. The impact of certain events can only be minimised when the required information is promptly provided for the people involved.
- Firm-wide risk analysis requires a large amount of data from diverse sources. Integration is required to facilitate prompt retrieval of information. Information integration is usually a key challenge in ERM implementation.
- Aggregated financial information (e.g. total revenues or total losses in relation to segments, branches or products) can provide an indication of a firm's overall financial health (Rasid, Isa & Ismail, 2014:140).

The findings of (Rasid, Isa & Ismail, 2014:140-141) in terms of establishing a relationship between ERM and a MAS suggest that the higher the activities relating to risk management, the higher the contribution of a broad-based MAS towards the organisation's non-financial performance, and non-financial performance provides an indication of potential or subsequent financial performance. Besides showing the dependence of ERM implementation on a broad-based MAS, the findings also support the increasing perception that ERM is a source of competitive advantage.

Management accounting systems play important roles in the risk management process (e.g. risk measurement, risk reporting and risk monitoring). These systems provide information that reduces the uncertainty associated with managerial decisions. Thus, the integration of a MAS and a risk management process is beneficial in building an effective management control system (Rasid, Isa & Ismail, 2014:129). The earlier study by Soin (2005) indicates that consideration of risks was less visible in the budgeting, performance measurement and cost-control processes of sampled companies. However, the results of the study highlighted the relevance of the application of MAPs to support and broaden the coverage of ERM implementation and the overall control system in an organisation. This was demonstrated to be particularly relevant in the area of cost-benefit estimations, the measurement and analysis of cost implications of potential outcomes from risk events associated with business decisions (Rasid, Isa & Ismail, 2014:131; Soin, 2005; Williamson, 2004).

Management accounting systems and risk management are integral to setting strategic plans and implementing PMSs. The role of a MAS in the risk management process is evident in the provision of information for planning and control functions (e.g. strategy setting and PMS) and hence the reliance on a management accounting information system for a formal risk management process (Rasid, Isa & Ismail, 2014:132; Zainun Tuanmat & Smith, 2011:223). A good example of a management accounting practice that can enhance ERM is the use of the balanced scorecard (BSC) developed by Kaplan and Norton in 1992 as a performance measurement system (Beasley, Chen, Nunez & Wright, 2006; Kaplan, 2009:1253; Kaplan & Norton, 1992:71-79; McWhorter, Matherly & Frizzell, 2006; Rasid, Isa & Ismail, 2014:133).

According to Ratnatunga and Alam (2011:354), management accounting reports include enterprise governance information and the analysis of the organisation’s sub-systems and, therefore, can be used at both senior management and board levels to facilitate value-oriented decisions. From the perspective of relevant studies, the authors posit that traditional management accounting techniques such as budgeting, standard costing and variance analysis have been applied in performance evaluation and compensation systems (ibid.). In addition, the job role of a management accountant in relation to performance management is theoretically visible in the managerial communications that occur within the broad spectrum of an enterprise governance structure. However, the authors state that the empirical evidence does not clearly suggest the application of management accounting techniques and practices in strategic governance, performance and risk management in practice (ibid.). Moreover, the results from a few surveys conducted in this field have shown that management accountants play an insignificant role in strategic governance processes involving performance and ERM (Collier, Collier, Berry, Berry & Burke, 2006).

Conversely, in a survey of financial institutions in Malaysia, Rasid, Isa and Ismail (2011:566) examined the interrelationship between management accounting and risk management functions and the extent to which MAPs, tools and techniques are applied in the risk management process of the sampled organisations. The findings that portray the interrelationship between management accounting and risk management practices indicate a major application of MAPs in the risk management function of the surveyed organisations. Management accounting practices such as financial statement analysis, strategic planning, budgeting and budgetary control were found to play significant roles in the risk management processes of the organisations under study.

The analysis of the post-survey interview in the same study by Rasid, Isa and Ismail (2011:579) suggests that the role of management accounting in the risk management function can be described generally as follows:

- Risk management and management accounting functions are interrelated since both are intended to be applied in the decision-making process of organisations. The management accounting function provides the managerial information required for decision-making and, therefore, should be naturally associated with the risk management function since business decisions are associated with risks.
- Management accounting systems support the measurement of the financial and operational risk profile of an organisation through the provision of indicators of financial stability and the information relating to the efficiency of processes. Accordingly, this provides for the formulation and application of appropriate risk mitigation measures by the management.
- The role of management accounting in the risk management function is more visible and significant in organisations where the ERM approach is adopted. Enterprise risk management is holistic and integrated in nature, hence the involvement and co-ordination of every staff member in its implementation. One of the respondent companies in the study of Rasid, Isa and Ismail (2011) that has a formal ERM system identified the finance department as the major source of the information required in the integrated system to measure credit, market and operational risks. Moreover, the activities of the management reporting team were highly integrated with the risk management function.

In some of the studies mentioned earlier in this section (2.3.2), there was insufficient empirical evidence to suggest the application of management accounting techniques and practices in the risk management function of the sampled organisations. In addition, some findings show that consideration of risks was less visible in the budgeting, performance measurement and cost-control processes of the respondent organisations. However, the importance of management accounting practices in the risk management function has been empirically established in other studies, and the theoretical interrelationship between management accounting and risk management functions has been sufficiently proved in the management accounting literature. This is captured in the theoretical model developed for this study (see Section 2.4).

The foregoing findings indicate that the concept (application of management accounting techniques in the risk management function) is still developing. In relation to the case company, the findings suggest that approaching risk management from an integrated perspective and developing a sound managerial accounting system are relevant and transparent measures that will improve the process of managing the risks associated with the company's operation and promote greater organisational legitimacy. In relation to the job role of a management accountant, the non-visibility of the risk management role could only be a function of position nomenclature rather than the overall management accounting function of the organisation.

The essence of risk management is to ensure as far as possible that the objectives of an organisation are achieved. The knowledge of management control and PMSs directed at the same objectives is within the domain of the management accounting function. Based on this argument, the arising research questions according to Soin and Collier (2013:84) are how the management accounting function is involved in the practice of risk management or in terms of job title and delineation and how risk management practices implicate management accountants. From the findings of Collier *et al.* (2006:5), Soin and Collier (2013) posit that management accountants have suffered marginalisation in the practice of risk management due to the perception that their skills and knowledge base are narrow relative to the wider and holistic appreciation of enterprise risk. In this regard, it may be relevant for the case company to consider risk management training for its managerial accounting staff as a support base for more formal ERM implementation.

A transparent and verifiable decision-making process, especially in relation to decisions that have significant impact on the value of an organisation, requires documenting the following: [1] available sources of information; [2] sources of information actually used; [3] the methods, techniques and tools applied in evaluating alternative courses of action; and [4] how decisions are finalised. According to Wagenhofer (2016:116), these items fall within the core management accounting function. Hence, the decision-making process will be more effective with management accountants who play key roles in internal control systems, risk management and the overall corporate governance. Wagenhofer (2016:116) also argues that a standardised decision-making process requiring significant documentations may, however, lead to increased outsourcing of decisions, that is, relying more on the work of consultants than the work of the management accountants in the firm.

Although genuine business decisions can turn out badly, managerial decisions should always be made with honest intentions and based on well-analysed and documented information if management is adjudged to act in the best interest of the organisation and its stakeholders (Wagenhofer, 2016:116).

Table 2.1: Functional classification of management accounting techniques

Costing systems	**Budgeting**	**Responsibility centre reporting and performance measurement**	**Analysis for decision-making / strategic analysis**
1. Job-order and/or 2. Process costing 3. Standard costs 4. Variable costing 5. Target costing 6. Quality costing 7. Activity-based costing 8. Life-cycle costing	1. Operating budgets 2. Flexible budgets 3. Capital budgets	1. Segment reporting 2. Responsibility centre reporting 3. Cost allocations 4. Transfer pricing 5. Balanced scorecard 6. Benchmarking	1. Variance analysis 2. Capital spending analysis 3. Overhead analysis 4. Cost-behaviour analysis (Break-even analysis) 5. Financial statement analysis

Source: Drury (2018:82-542); Armitage, Webb and Glynn (2016:45); Maziriri and Mapuranga (2017:15); Rao and Ahmad Beg (2015:9)

2.3.3 Management accounting techniques, practices and systems considered relevant for application in the case organisation

In this section, the management accounting techniques, practices and systems that are considered relevant for application in the case company are identified in relation to their application in organisations that are similar in size, their relevance in the risk management process, and the nature of the case company's business operation. The case company, by applicable standards, is a medium-sized organisation and, therefore, falls within the SME category. Although located in a developing country, the case company is comparable to SMEs operating in developed countries (see Section 2.1). Moreover, the company is a family owned business with potential limitations in its management accounting practices and use of relevant techniques (Neubauer, Mayr, Feldbauer-Durstmüller & Duller, 2012:41). However, the company is experiencing significant growth in the size of its operation and achieving an increasing and relative level of formalisation in its structure. Thus, applying more management accounting techniques or increasing the level of their application is more likely and viable for the case company. Therefore, management accounting techniques (or the level of their application) identified in management accounting literature applicable in the SME sub-sector support risk management and are appropriate for the nature of the case company's business (merchandising) and its strategies. It is recommended in management accounting literature that organisations should place more emphasis on management accounting techniques that enhance their strategies (Drury, 2012:581).

Management accounting practices in SMEs have received increased research attention (López & Hiebl, 2015:81). Using a combination of survey data and field interviews, Moores and Yuen (2001) compared the use of management accounting techniques by SMEs at four different stages of the organisational life cycle (start-up/birth, growth, maturity, revival and decline). The findings indicate more reliance on management accounting techniques as firms move from the start-up stage to the growth stage and lighter usage during the decline stage. The result of the study by Brierley (2011) shows that larger companies in Britain are more likely to apply more advanced techniques and practices (activity-based costing) than SMEs. Moreover, the study shows that the use of traditional management accounting techniques and other forward-looking measures is applicable in the strategic processes of SMEs. It was noted, however, that SMEs do not usually have the incentive to apply very sophisticated techniques due to the size factor and organisational structure.

Through 22 in-depth field interviews, Armitage, Webb and Glynn (2016:34-35), studied the extent to which management accounting techniques are being used by 22 SMEs in Australia and Canada and explored the underlying reasons why specific management accounting techniques are not used. The results show that of the 19 management accounting techniques examined, costing systems, variance analysis, operating budgets and financial statement analysis were moderately or highly used by the respondent firms, while the majority of the techniques were either lightly used or not employed at all by the SMEs in the study sample.

Cost-behaviour analysis, activity-based costing, capital expenditure analysis and flexible budgeting were reported to be the least used. Moreover, manufacturing firms in the sample relative to merchandise and service firms in the study sample recorded higher use of costing techniques, budgets, overhead analysis and financial statement analysis. The study identified three variables as the primary factors that seemingly influence the extent to which specific management accounting techniques were being applied by the sampled SMEs. They are [1] the decision-usefulness of the specific technique; [2] the nature of the operating environment (the complexity of the operating environment—firm-specific variables such as size, number of operating segments, single/multiple products/services, and number of regional markets covered); and [3] the growth stage of the company. It is important to note that the interaction of these variables (internal and external factors) constitutes the risk sources of an organisation. Therefore, these findings are important in studying the risk-mitigation relevance of the management accounting techniques and practices.

Functional classifications of management accounting practices and techniques, as adopted in some studies, include budgeting, responsibility centre reporting/PMSs and analysis for decision-making (see Table 2.1). It was noted that where these techniques were being used, the level of application or the sophistication of their use depended on contingency factors such as the size and structure of the organisation. This assertion is consistent with the contingency theory of management accounting practice, which states that no unique set of practices or techniques exists that fits all business organisations in all circumstances (Otley, 2016:46; Uyar & Kuzey, 2016:103).

Therefore, given the associated contingency factors as considered in related literature, this study examines the applicability of a set of management accounting techniques in the management control process of the case company and its relevance in its risk management process. The set includes the techniques that are continuously applicable as routine managerial and operational processes such as budgeting and the use of the BSC as a PMS. The set also includes techniques and practices such as benchmarking, target costing, value analysis (or value engineering) and functional analysis, and teardown analysis (or reverse engineering). According to Drury (2018:615-618), these techniques are applied on an ad hoc basis whenever opportunities are identified for process improvement, changes and overall cost reduction. Moreover, the set includes the analyses for decision-making such as financial statement analysis and profit planning (cost-volume-profit [CVP] analysis). These are discussed from the perspectives of budgeting, performance measurement, costing systems and analysis for decision-making (see Table 2.1).

In relation to budgeting, the results of a survey conducted on sampled Turkish firms show that a firm’s performance is significantly influenced by the extent of budget use. Moreover, the extent of budget use in an organisation is determined by the following contingency (contextual) factors: size, organisational structure, information technology and perceived environmental uncertainty (Uyar & Kuzey, 2016:91). Budgeting has remained the traditional tool employed by both profit and non-profit organisations in allocating financial and human resources and evaluating performance. It is an instrument for planning and control functions. Although its costliness and usefulness has been probed, business organisations and other institutions have continued to deploy a considerable amount of resources and time to periodic budgeting (ibid.).

The analysis of the post-survey interview in the study by Rasid, Isa and Ismail (2011:580) also indicated the use of budgeting and strategic planning in the risk management function. The study showed that risk consideration constituted an aspect of the formal budgeting process in particular respondent companies. There was evidence of a co-ordinated risk identification and response strategy in the budgeting and strategic planning process at the top management level with direct involvement of group finance, group strategy and strategic business units.

According to Rasid, Isa and Ismail (2011:580), budgets define the future action plans of an organisation, plans that have associated risk implications. Therefore, any changes made in the budget projections (variables or estimates) can either increase or reduce the organisation's exposure to particular types of risk. Besides the inclusion of risk identification and mitigation functions in the budgeting process, the empirical evidence suggests the use of budgets as a mechanism for risk exposure control in the respondent organisations (ibid.).

The findings of Armitage, Webb and Glynn (2016:34-35) relating to start-up firms in their study sample demonstrate that basic management accounting techniques such as basic budgeting systems, cash budgets and forecasts are essential elements in the development of control systems. The evidence from the study shows that many early-stage SMEs (SMEs in the process of developing their control systems) in the sample focused on these basic techniques. This finding is consistent with the view that risk management has developed into a core function in the management control process, an area considered to fall within the management accounting role.

According to Drury (2012:364), the administration of the budgeting process generally involves the following, albeit individual firm specifics:

- Setting up a budget committee to oversee the budgeting process and to ensure that the budget is realistic, providing for effective budgetary control function.

- Appointing a budget officer and designated accounting staff to assist managers in the preparation and submission of their budgets to the budget committee.
- Preparation of the budget manual (by the accountant) to provide details of the procedures involved in the budgeting process, the objectives of the budget, important references and the formats to be adopted by the managers in the preparation of their budget documents.

Drury (2012:364) describes the following as the vital steps in the budgeting process: provision of the budget policy and guidelines for the officials who are responsible for budget preparation ; identification of the limiting factor (e.g. for sales demand, available capacity); preparation of the sales budget; preparation of the initial drafts of various budgets by the responsible officials and negotiation/liaison with superiors; co-ordination and review of budget drafts and final adoption of budgets; and periodic/on-going review of the budgets. Budgeting as a management accounting control system should reflect the ex-ante and ex-post perspectives of management accounting and risk management functions (see Table 2.3), especially where risk identification and treatment are part of the organisation's culture (see Section 2.2.2.2).

Regarding the relevance of a PMS, literature records that in 1992, Kaplan and Norton devised the BSC to integrate financial and non-financial performance measures, providing for the identification of key measures linked to strategy (Drury, 2012:584-585; Kaplan & Norton, 1992:71-79; Kaplan & Norton, 2001:147-160). See Table 2.2 for typical performance measures (lag and lead measures) that can be associated with the objectives and strategic leanings of the case company. The measures could serve as risk assessment mechanisms, providing the means to assess the prospects of achieving the company's objectives (Drury, 2018:566-570). The lag measures (according to Table 2.2) are outcome measures, which are largely defined in terms of financial performance. The lead measures (according to Table 2.2) include the customer perspective, the internal business perspective and the learning and growth perspective; these could represent the drivers of potential financial performance (Drury, 2018:570). The lag and the lead measures can be explained, respectively, in terms of feedback and feed-forward control measures (see Section 2.4.1). Their principles are, therefore, consistent with the risk management definition adopted for this study. Regarding the strategic leaning or position of the case company that could be enhanced with the implementation of a performance management system, the company has continued to adopt a mix of product differentiation, cost leadership and focusing strategies (Drury, 2012:580-581).

Table 2.2: Typical lag and lead measures of the balanced scorecard

Performance measures	**Performance focus**	**Performance perspective**
Percentage growth in business from existing customers, customer survey satisfaction ratings and customer profitability analysis	Increase customer retention, satisfaction and profitability	Customer
Percentage of revenues from new customers, new market/customer segments Sales growth percentage for targeted segments	Increase customer acquisition, identify and explore new market/customer segments	Customer
Percentage on-time deliveries Percentage returns from customers	Improve delivery time and product quality	Customer

Performance measures	**Performance focus**	**Performance perspective**
Percentage reduction in product unit cost	Achieve reduction in product unit cost	Internal business process
Percentage of revenues from new products/models	Develop and introduce new products or product models	Internal business process
Product development cycle time	Decrease the time taken to develop and introduce new products/models	Internal business process
Percentage of days in a period that the IT system recorded a breakdown or had severe issues Percentage of transactions recorded in real time or on same-day basis Number of customer statements manually prepared or adjusted in a period Percentage of inventory count variances arising from information system and process limitations	Increase information system capabilities	Internal business process
Employee satisfaction survey ratings, annual percentage of key staff leaving and sales revenue per employee	Increase and retain employee capabilities	Learning and growth
Number of suggested improvements per employee, number of suggestions implemented per employee, percentage of employees with personal goals aligned with the balanced scorecard, and percentage of employees who achieve personal goals	Increase motivation, empowerment and alignment	Learning and growth
Percentage of selling and administration costs to total revenues Return on investment	Reduce selling and administration costs Adopt a more profitable product mix Enhance asset use	Financial

Source: Adapted from Drury (2018:566-570), Drury (2012:584-591); Kaplan and Norton (1993:1-17)

Moreover, (Rasid, Isa & Ismail, 2011:580) identified the existence of a link between the MAS and the risk management in a respondent organisation that was implementing the BSC framework as a PMS. Risk analysis was based on the identified key performance indicators (KPIs) within each dimension of the BSC. The process involved the identification of the risk factor, risk owner (personnel or unit responsible) and the likelihood of failure associated with each KPI. Accordingly, the assessment of the related key risk indicators follows to inform or enable the appropriate risk mitigation measures. Thus, the integration of the BSC system and the risk management function has been identified to support and enhance the achievement of strategic objectives (Beasley *et al.*, 2006; Rasid, Isa & Ismail, 2011:581). Management accounting information, particularly in relation to performance management, provides for the assessment of an organisation's risks and the subsequent actions required to eliminate the risks or to minimise their possible impact (Rasid, Isa & Ismail, 2011:580).

In relation to SMEs, Yiannaki (2012) studied the application of a five-dimension model of a BSC in the risk and crisis management of SMEs. The study, conducted on a set of Romanian and Cypriot small and medium-sized firms drawn proportionally from trading, manufacturing and service sectors, tested the probability of the firms to mitigate risk impact and to deal with crisis management by using the five-dimension risk management model. The collected data related to the period of the global financial crisis, 12/2008–06/2011, the crisis that had a great impact on the European economy (Yiannaki, 2012). The result of the analysis showed greater improvement in the financial performance of firms that applied the five-dimension model than firms that did not use the model (Yiannaki, 2012:406). The model associates risk management with the following aspects of the BSC: Enterprise Responsible Package (ERP), Enterprise Financial Package (EFP), Enterprise Supervision and Resource Development Package (ESRDP), Enterprise Technological Networking Advance (ETNA), and Enterprise Innovation and Radical Change Development (EIRCD) (refer for details Yiannaki, 2012:409-415).

Moreover, Yiannaki (2012:416) posits that this BSC model offers flexibility regarding management discretion and convenience in appraising the generic and specific risks of the SME. Thus, the BSC model can be adapted to the specific needs of the firm, industry, business operation cycle, manager and stakeholder, depending on the emerging risk assessment results and the capacity to interpret the risk of the organisation (ibid.). Although the tool was originally developed as a four-dimension measure, a fifth aspect could be introduced when there is a need to consider additional stakeholders who may be of interest in regard to the achievement of the objectives of a particular organisation (ibid.). According to (Broccardo, 2010:81-82), this adaptability underpins the flexibility derived from the application of this tool. Moreover, the author asserted that the PMS can only reflect the strategic outlook of the particular organisation when the associated indicators are identified and developed in relation to each category of stakeholders (ibid.).

In respect of development and application, the introduction of the BSC as a PMS is a significant contribution to ‘‘strategic management accounting“ (Drury, 2012:587). Kaplan and Norton (1993:3) posit that the BSC is special in terms of the following characteristics:

- The BSC is not restricted to traditional financial measures (measures of previous performance). It incorporates the forward-looking measures to indicate how the organisation's management can improve future performance.
- By integrating the external and internal measures (strategic management accounting) and highlighting where trade-offs are recorded between performance measures, the BSC provides for the balancing (optimisation) of future performance measures, enhancing the ability of the organisation to avoid improving on a particular measure at the expense of another.
- The BSC enables an organisation to focus only on the measures that are most crucial to the success of its strategy, avoiding shadow chasing associated with dissipating effort to track measures over and above what is necessary. Thus, the BSC is a top-down reflection of the company's mission and strategy unlike most practices that are based on bottom-up and ad hoc processes.

In view of the particular emphases above, the BSC is probably the most widely used approach to mitigate the adverse consequences of relying or focusing excessively on short-term financial performance measures (Drury, 2012:497). Linking the BSC measurements to strategy is the critical aspect of the BSC development process and entails the following:

- determination of how the success in the company's vision and strategy will reflect on all the aspects of the BSC,

- identification of the critical success factors in each aspect, and
- ascertainment of the key measurements as the performance indicators (Drury, 2012:586-597; Kaplan & Norton, 1993:3-7).

In respect of costing systems, the literature indicates that costing systems could constitute a significant part of the broad-based business information system required to implement ERM effectively (Al-ahdal, Alsamhi & Prusty, 2015). A costing system supports the relevant assessments required for varying the prices of products and services in organisations where risk-based pricing is applicable (ibid.). Moreover, costing systems provide for the generation of the required information to assess the overall financial health of an organisation in terms of total costs, revenues and losses in relation to segments, branches or products. This assessment provides indications of the prospect of achieving the objectives of the business and thus forms the basis for implementing mitigation measures (ibid.).

The risks associated with the activities of the case company could be described in terms of 'strategic risks', that is, risks associated with an organisation's strategy that are taken and managed to earn higher returns (see Section 2.2.1.2). It was stated earlier that organisations should concentrate more on management accounting techniques that advance the course of its strategies. Accordingly, management accounting techniques could be associated with strategic risk mitigation as follows:

- For a cost leadership strategy: Standard costing and variance analysis, use of flexible budgets and real implementation of budget control mechanisms, and strategic cost management
- For a differentiation strategy: Product costing systems such as activity-based costing (ABC) systems could produce more accurate product-costs measurements (vis-a-viz volume diversities) to implement this strategy effectively (Drury, 2012:581).

Since the case company outsources its manufacturing activities to overseas partners, the firm may not have the incentive for high implementation of costing systems or possess the capacity as a medium-sized organisation to implement sophisticated costing techniques such as ABC systems. Manufacturing firms relative to merchandise and service firms record higher use of costing techniques (Armitage, Webb & Glynn, 2016:34-35).

However, the use of contemporary techniques (strategic cost management) such as benchmarking, target costing, value analysis and other cost management and quality improvement measures (applicable whenever opportunities are identified for process improvement) could be applied by the company to mitigate the likelihood of business failures (Drury, 2018:560-561, 615-618). Management accounting systems traditionally focused on financial performance measures, paying less attention to important variables such as quality and reliability of products/services, on-time delivery, after-sales service and customer satisfaction. These variables are key factors that can influence the likelihood of achieving the business objectives in the global business environment that is associated with increasing complexities and competitive pressures (ibid.).

The application of these cost management techniques to improve the competitive ability of a company, especially in the area of customer retention, attraction of new customers, expansion of the customer base and overall improvement in revenue, is consistent with the risk management definition adopted for this study. This definition indicates taking advantage of identified opportunities to maximise value creation. Moreover, these techniques and practices are considered relevant to the case company on the premise that the key risks associated with the company's business are likely to include product failures due to defects, obsolescence and competitive pressures (see Section 2.2.1.1).

In relation to the relevance of cost and financial analysis, literature indicates that analyses for decision-making include variance analysis, capital spending analysis, overhead analysis, cost behaviour analysis (break-even analysis) and financial statement analysis (see Table 2.1). In the field of accounting and finance, these techniques or analyses relate significantly to risk management (Nichita, 2018:671). Risk management involves the assessment, evaluation, treatment and reporting of risks associated with the activities of an organisation. It thus follows that improved risk reporting has an essential element of good business governance (section 2.2.2; Nichita, 2018:671).

Variance analysis and capital spending analysis are associated with the standard costing method and the evaluation of long-term projects, respectively. Financial statement analysis and cost behaviour analysis (break-even analysis) are used more often in the analysis for decision-making. In relation to financial statement analysis, the quality of accounting standards governing financial statement disclosures (International Financial Reporting Standard [IFRS] as set by the

International Accounting Standard Board [IASB]) and the strength of regulatory enforcement or voluntary acceptance and application of the standards determine the quality of the financial information provided for the users (IASB, 2018; Nichita, 2018:672).

The IASB’s conceptual framework for financial reporting provides for the fundamental and the enhancing qualitative characteristics of useful financial information (IASB, 2018; Nichita, 2018:672). Relevance and faithful representation are the fundamental qualitative characteristics of useful financial information while comparability, verifiability, timeliness and understand-ability are the qualitative characteristics that enhance relevance and faithful representation (ibid.). Information in the financial reports must be factual in terms of an entity’s economic events and position for the period (faithful representation) and must possess confirmatory or predictive value to be relevant. Moreover, widespread adoption of the IFRS enhances comparability of financial reports (ibid.).

It can be interpreted from the foregoing that the predictive value of the information provided in the financial reports underlines the usefulness of the analyses of financial statements in predicting the potential outcomes of the future activities of the organisation. This in turn enables the implementation of mitigation measures where necessary to enhance the likelihood of achieving the objectives of the business. Furthermore, widespread adoption of the same accounting standards enhances comparability, providing the basis for an organisation to benchmark its activities against those of better performing entities. Benchmarking could provide for the identification of the potential outcome of the organisation's projected operation adjustments. These statements are all consistent with the risk management definition adopted for this study. Furthermore, risk reports associated with financial reports have the potential to increase the risk management relevance of analysing financial statements. Interestingly, risk reporting is increasingly being viewed by organisations as adding value to the overall quality management rather than mere compliance with reporting requirements (ASSOCIATION OF CHARTERED CERTIFIED ACCOUNTANTS [ACCA], 2014:11-13; Nichita, 2018:678). The qualitative characteristics of useful financial information could be extended to relate to other operational (non-financial) information in order to complement the financial information for efficient planning and control (quality management). This refers to the usefulness of management accounting reports, which from the perspective of this study could be defined in terms of the sophistication of the MAS (Section 2.4.2). A MAS is said to be sophisticated when the information output is broad based, integrated, aggregated and accessible in a timely manner (Rasid, Isa & Ismail, 2014:131). Sufficiency in scope of management accounting information implies the inclusion of both financial and operational information and even information from external sources (Drury, 2018:6; Fleischman, Johnson & Walker, 2017:12; Maziriri & Mapuranga, 2017:15). Moreover, a MAS by design should provide relevant and sufficient information for performance measurement (Section 2.3.1).

In relation to timeliness, a study by Waweru, Hoque and Uliana (2004:682) reflects cases where the management accounting reports that were previously made available on a quarterly or semi-annual basis were being prepared and delivered more often (weekly and even daily in some circumstances) as a result of the successful computerisation of the activities of the accounting unit. Moreover, computerisation made it possible for the reports to include the ageing of debtors and non-financial measures such as customer complaint reports. Computerisation further enabled the use of charts and figures in accounting reports, thus providing a better appreciation of management accounting information particularly among non-finance managers. Moreover, the success of the computerisation provided for greater delegation of decision-making responsibility to frontline workers since information required for such decisions was available to them in real time.

Application of CVP analysis in the decision process has the potential to reduce the risk exposure of an organisation (Drury, 2012:168-180, 340-342; Lulaj & Iseni, 2018:99-101). Managerial accountants apply the analysis to plan future operations and monitor the business performance by identifying the necessary activity levels or the required operational adjustments to break even and achieve the desired profit. Thus, the analyses facilitate the assessments of risks associated with the organisation's choice of service, product or product mix (ibid.). The CVP function is applied to express the relationships between sales value, sales volume (activity level), variable costs and fixed costs, and it is a useful planning tool in terms of predicting profits and the effect of changes in any of the function variables. The application of CVP analysis in respect of multiple products is easier and will be the same as in a single product setting if all the fixed costs are clearly attributable to each product. However, where a shared fixed cost is involved, a sales mix (ratio of combination of individual products) is determined and applied to define the standard batches with which the break-even point is measured (ibid.).

Furthermore, the predictive value inherent in observing the cost behaviour of an organisation provides increased accuracy in earnings forecasts (Banker, Byzalov, Fang & Liang, 2018:188). This supports the forward-looking nature of risk management (see Table 2.3).

2.4 INTERRELATIONSHIP BETWEEN MANAGEMENT ACCOUNTING PRACTICES AND THE RISK MANAGEMENT FUNCTION IN THE MANAGEMENT CONTROL PROCESS

2.4.1 Risk management function as part of management control systems

It was noted in Section 2.3.1 that the scope of risk management has developed beyond financial hedges and financial statement disclosures to issues about management control. The following definitions of 'control' and 'management control' provided in relation to management accounting are theoretically consistent with the risk and risk management contexts adopted for this study.

Control is "the process of ensuring that the activities of an organisation conform to its plan and that its objectives are achieved" and involves defining in advance the desirable behaviour, applicable procedures and the expected results as the basis for control activities (Drury, 2018:403). In the official terminology of the Chartered Institute of Management Accountants (2005:9), control in relation to management accounting is described as the means of "ensuring that planned and undertaken activities lead to desired outcomes". Additionally, management control according to the Chartered Institute of Management Accountants (2005:9) consists of "all of the processes used by managers to ensure that organisational goals are achieved and procedures adhered to and that the organisation responds appropriately to changes in its environment”.

Thus, the objective of MCSs is to increase the likelihood of success by influencing employee behaviours in the desired manner. In other words, ensuring that failures in employees’ actions, defects in operating processes and business decisions are minimised to secure the successful achievement of the objectives of the organisation (Drury, 2018:404; Merchant & Van der Stede, 2007).

Control can be described as strategic when the primary focus is the organisation’s competitive position in the industry, given its strengths and weaknesses (Drury, 2018:404). This can be viewed from the perspective of strategic management accounting applied through corporate governance codes. Corporate governance is the system by which the board of directors directs and controls the affairs of a company on behalf of its owners/shareholders. Accordingly, the responsibilities of boards involve managing the risk exposures of their organisations and the continuous review/improvement of the internal control system and include setting the strategic goals/objectives of the company, provision of the leadership required to implement the goals, supervising the activities of the management and reporting to the shareholders (Collier & Agyei-Ampomah, 2008:5).

Control functions in an organisation assume the form of feedback and feed-forward control models (Drury, 2018:403-406). These models depict the principles of risk management and are thus consistent with the risk management definition adopted in this study. Feedback control involves monitoring achieved outputs against desired outputs and taking the necessary corrective actions if deviations exist (ibid.). Conversely, feed-forward control is a system where future outputs are predicted and compared with expected future outputs, and control actions are initiated to minimise differences where these expectations differ from what is desired. Thus, the objective of feed-forward is for control to be achieved before any deviations from the desired outputs occur (ibid.). From a management accounting perspective, control functions in an organisation are mainly organised as 'management accounting control systems', a term that is often used interchangeably with the terms 'accounting control systems' and 'management control systems'. Control functions represent an aspect of the control mechanisms applicable in an organisation and consist of a set of MAPs such as budgeting, standard costing, and periodic performance reporting together with non-financial measures (ibid.).

Management control systems, as a broader term, encompass three control mechanisms: action or behavioural controls, personnel (cultural and social) controls, and results or output controls, referred to as management accounting control systems (Drury, 2018:404-409). However, management accounting control systems are predominant and significant controls in many organisations. This predominance is due to their use in generating aggregated results, particularly in monetary terms, of a range of different activities, thus enabling stakeholders to assess and monitor profitability and liquidity, which are essential to the success of all organisations (ibid.).

The environment in which an organisation operates presents both opportunities and risks and consists of markets for purchases and sales of products and services that bring producers, customers and resource suppliers together (Collier & Agyei-Ampomah, 2008:12). These markets are affected by technological, political, economic and social factors. Controls are usually implemented by organisations as risk-mitigation measures to enable organisations to adapt to changes in the environment. These changes include upside risks, which are opportunities an organisation can harness to achieve its objectives (ibid.).

Controls start with the setting of objectives using both financial and non-financial measures (Collier & Agyei-Ampomah, 2008:13). Financial measures can be presented in the form of return on capital employed, which is usually reflected in standard costs and budgets. Non-financial measures include product quality, customer satisfaction and market share. These measures may be established from time to time using a performance measurement tool such as the BSC (ibid.).

One of the findings of Armitage, Webb and Glynn (2016:35) in their study of the use of management accounting techniques by SMEs in Canada and Australia suggests that basic management accounting techniques such as basic budgeting systems, cash budgets and forecasts are essential elements in the development of a control system, particularly for early-stage SMEs. This finding was empirically supported by the focus on these basic techniques by many of the early-stage companies in their study sample. Hence, Armitage, Webb and Glynn (2016:35) posit that the findings might be of interest to designers of MCSs for SMEs in their early stages of growth. Drury (2018:590-591) classified management accounting control systems into two categories, namely traditional management accounting control systems and cost reduction (cost management) systems and described them as follows:

- Traditional management accounting control systems are applied continuously as part of the routine managerial activities. The systems involve setting standards in advance mainly through budgets and comparing actual results with the standards to identify variances and enable corrective actions. They are cost containment measures.

- Cost management systems or techniques are applied relative to identified opportunities for process improvement, changes and overall cost reduction. This includes techniques such as benchmarking, target costing, value analysis or value engineering, functional analysis, tear down analysis or reverse engineering, life-cycle costing, value-chain analysis, kaizen costing and total quality management. Some aspects of cost management systems do not require the use of accounting information but ideally, the objective is to achieve cost reduction and enhance customers' satisfaction.

Before the development of these modern techniques and systems, management accounting control systems traditionally focused on financial performance measures, paying less attention to important variables such as quality and reliability of products/services, on-time delivery, after-sales service and customer satisfaction, which have become key success factors in the complex and competitive business environment (Drury, 2018:560).

2.4.2 Theoretical model of risk management from the perspective of management accounting

Soin and Collier (2013:82), in their article, "Risk and Risk Management in Management Accounting and Control", argue that risk management has become a visible part of organisational life in both the private and the public sector. The authors assert that risks and risk management can determine the design of areas of responsibility and accountability by inducing changes in organisational practices and individual behaviours, bringing legitimacy to certain aspects of organisational governance. Soin and Collier (2013:82) posit that risk management is no longer restricted to issues concerning financial risks or sufficient financial statement disclosures but has rather expanded in scope to become a visible component in the management control system. Hence, risk management is an area in which the management accounting function is advised. They, however, maintain that the interrelationship between these two control mechanisms (risk management and management accounting function) in the management control process has not received sufficient research attention (ibid.).

Meanwhile, it can be viewed from the perspective of contingency theory research that the interrelationship between ERM implementation and MAS, as organisational features or attributes established with empirical evidence, can be assumed to portray the appropriate fit (Otley, 2016:46; Rasid, Isa & Ismail, 2014:133). Hence, considering the following interrelationships that have been empirically observed, the MAS should be designed to consist of the specific information characteristics that fit into ERM implementation (Rasid, Isa & Ismail, 2014:133):

- The implementation of ERM requires a broad-based information system to measure and communicate risks, and the MAS is a major part of the broad management information system.
- The view of enterprise risk from the perspective of ERM is broad, holistic and requires an integrated approach. Therefore, an expanded MAS (sophisticated MAS) that provides timely, integrated and aggregated information will most likely support and enhance ERM implementation.

- Both the MAS and risk management are future oriented. Hence, broad-based and integrated information made available in a timely manner enables management to assess the potential impact of specific business decisions and to initiate appropriate response actions in a proactive manner.
- The decision-making process, which is the management accounting function, is expedited with the availability of summarised or aggregated information. This is an essential requirement in the ERM system and evidence from studies shows that one of the major challenges in ERM implementation is data integration.

In a case study of financial service firms, Mikes (2005) highlights the complementary roles of accounting controls and the integrated risk management system that exist as separate controls within the management control system. Mikes (2005), however, indicates the consequence of their existence as separate functional areas within the management control system. The findings underpin the competition between the two control systems for relevance and for top management’s attention. This finding suggests there are implications for implementing a formalised risk management system as a separate functional line from that of managerial accounting. Accordingly, it will be somewhat difficult to mark the boundaries of each control activity within the management control system clearly since the two are potentially interrelated (Rasid, Isa & Ismail, 2014:131). Soin and Collier (2013:84) posit that more empirical evidence is necessary to broaden the understanding on how the MAS and the risk management function are linked as two control mechanisms within the management control system (cp. European Network for Research in Organisational & Accounting Change, 2016:62-63).

Management accounting and risk management functions are both associated with managerial decisions. Although the limitation of empirical evidence on their interrelationship still subsists, they are theoretically integrated in the management control process (see Table 2.3). Both control measures are based on actual historical data (ex-post) and projected data (ex-ante) (Bhimani, 2009:2; Rasid, Isa & Ismail, 2011:567-568). These are depicted in Figure 2.1 as the theoretical association of management accounting and risk management functions and in Table 2.3 as ex-ante/ex-post perspectives. Both functions align with the management control framework for the provision of information that guides managerial actions (see sections 2.3.1 and 2.3.2).

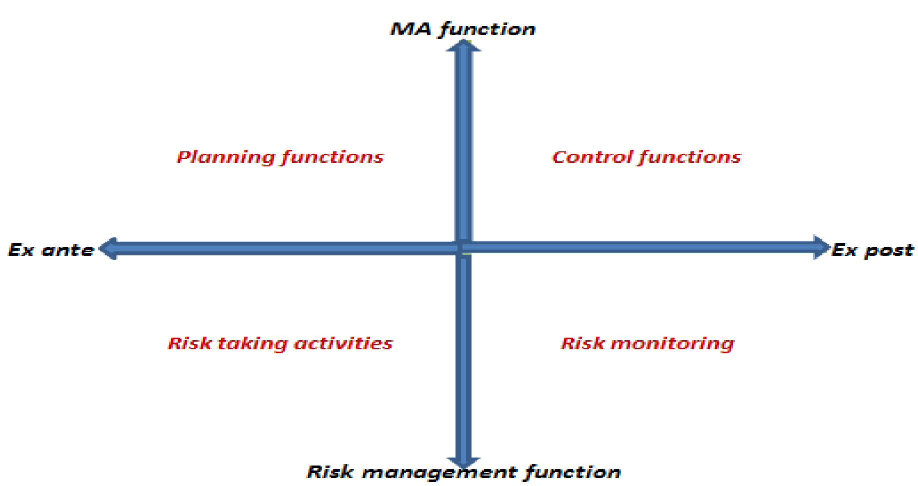

Figure 2.1: Theoretical association of management accounting and risk management functions

Source: Adapted from Rasid, Isa and Ismail (2011:567)

Table 2.3: Ex-ante and ex-post perspectives of management accounting and risk management functions

	MA function (decision-making, planning and control process)	Risk management function (COSO 2004 model)
Ex-ante	1. Identify the objectives of the business 2. Search for alternative courses of action 3. Select appropriate courses of action 4. Implement the decisions	1. Internal environment 2. Objective setting 3. Event identification 4. Risk assessment 5. Risk response
Ex-post	5. Compare actual and planned outcomes 6. Respond to divergences from plan	6. Control activities 7. Information and communication 8. Monitoring

COSO: Committee of Sponsoring Organizations of the Treadway Commission; MA: management accounting

Source: Adapted from Committee of Sponsoring Organisations of the Treadway Commission (2004:3-4); Rasid, Isa and Ismail (2011:567 & 570); Drury (2018:7)

Azudin and Mansor (2018:223) describe MAPs as techniques and tools that are specially developed for application in the management of the operational and strategic activities of an organisation for the purpose of achieving optimal performance. Therefore, the MAS, as a management control mechanism, supports and engenders behaviours and values required for optimal performance and the realisation of strategic goals. Researchers believe that the application of MAPs can diminish the likelihood of business failures, improve the chances of success and help firms compete favourably in today's dynamic business environment (Alleyne & Weekes-Marshall, 2011:49; Collier *et al.*, 2006; Gichaaga, 2014; Maziriri & Mapuranga, 2017:16; Mitchell & Reid, 2000:385). This position is consistent with the risk management definition adopted for this study and is shown in Figure 2.2 below.

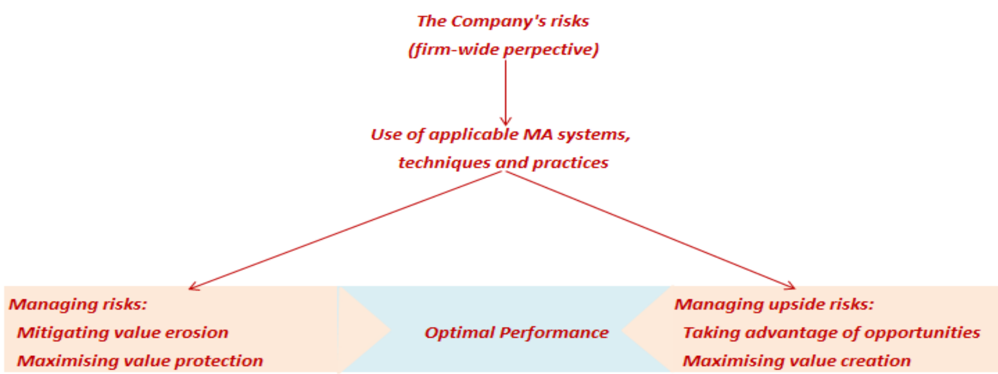

Figure 2.2: Theoretical model regarding application of management accounting techniques in the company's risk management process

Management accounting systems are traditionally concerned with the provision of financial information for internal use but the usefulness of their output in directing managerial attention towards problem areas (risk indicators) is enhanced with the incorporation of external and non-financial data (Bhimani & Langfield-Smith, 2007; Rasid, Isa & Ismail, 2014:130). The scope of management accounting function (as a management control measure) includes taking advantage of identified opportunities to maximise the value of an entity (Drury, 2012:542-543).

2.5 CONCLUSION

In this study, the perspective of risk is more oriented towards the organisational context of the term, that is, the likelihood of variations in the achievement of the company's objectives. Accordingly, risk events represent those probable events for which the occurrence or non-occurrence possesses potential impact (adverse or favourable) on the company's ability to achieve its objectives. The key risk events for the case company, considering the nature of its business, are likely to include product failures due to defects, obsolescence and competitive pressures. Moreover, the risks that are associated with the business operation of the case company are considered in this study from the perspective of business risks, operational risks and strategic risks, and the importance of the holistic and integrated approach to managing these risks is highlighted in the review. Except for the levels of formalisation and complexity that vary according to the firm's size, ownership and management structure, regulation and the management's risk orientation, the risk management concepts and principles are applicable across enterprises (small, medium and large).

Risk management is fast becoming a core function in the managerial process due to the increasing competition and complexities associated with the global business environment. Thus, risk management has developed beyond the calculation of value at risk and financial statement disclosures to become an important management control function, an area adjudged to fall within the purview of MAP. Therefore, MAPs, as an important part of the managerial control system, are fast adapting in this direction. In this review, the theoretical interrelationship between risk management function and management accounting techniques in the management control system has been reported. The innovative use of budgeting and PMSs as vital mechanisms in the process of risk identification, assessment and treatment has been identified in the literature. In addition to these routine MAPs (budgets and the application of the BSC as a PMS), other management accounting techniques have been developed as tools to provide for the comprehensive management of the key success variables in the complex and dynamic business environment. These techniques and practices are mainly applied in relation to identified opportunities for process improvement, changes and overall cost reduction. They include benchmarking, target costing, value analysis (or value engineering) and functional analysis, and tear down analysis (or reverse engineering). These management accounting practices and their risk management relevance are identified as a background for the subsequent empirical analysis of the case.

Furthermore and in relation to the SME subsector to which the case company belongs, the literature reflects that there are no sets of management accounting techniques and practices that are strictly applicable to SMEs. Rather, in line with the contingency theory of MAP, factors such as size of the business (and number of operating segments and products/services), ownership structure, operating environment, growth stage of the business and the decision-usefulness of the specific management accounting technique mainly determine the use and extent of the application of these management accounting techniques and practices.

This research examines the improvement in the risk management process of the case company (a medium-sized enterprise) from the perspective of MAPs. The study is carried out in view of the following questions: What are the risks that are inherent in the operation of the company and what are the processes involved in managing these risks? Which are the applicable management accounting techniques? In what ways can the management accounting techniques be applied to improve the risk management process? Concerted effort is thus deployed in this chapter to approach these questions from the perspectives of the existing literature. The following chapter shows the detail of the methodology applied in this study, while the analysis of the empirical data, the conclusions and the recommendations are reported in the subsequent chapters.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In the previous chapter, related literature was reviewed to highlight the essence and significance of the research problem. The concept of risk, risk management, and the application of management accounting techniques were defined and described within the context of the research problem. The review was aimed at associating the use of relevant management accounting techniques with the risk management function, as defined in the study, using an existing theoretical framework and the findings from previous studies. In this chapter, the methodology as applied in the process of this study is discussed in detail. The chapter highlights the procedure and the methods used in the course of conducting this study, that is, the research approach and the design that were adopted to collect and analyse data in order to answer the research questions.

3.2 RESEARCH APPROACH

According to Creswell (2014:25), the choice of method or approach, is determined by the nature of the research problem, the arising questions (posed to address the problem), and the information gathered from related literature that was reviewed to establish the significance or importance of the research problem. This study focused on the application of management accounting techniques in the risk management process of a single organisation, Fedan Investment Limited. The qualitative research approach was adjudged the most appropriate for the case. Thus, a qualitative research design was adopted for the study.

The qualitative approach involves exploring a research problem and developing a detailed understanding of a central phenomenon (Creswell, 2014:27-30). A literature background is applied to justify the research problem. The purpose of the research and the research questions are formulated in broad or general terms to enable the research participants to express their opinions and relate their experiences. Moreover, data collection consisting of views and opinions expressed in words involve a small number of research participants (ibid.). Text analysis is applied to describe the data and identify relevant themes. Interpretation is based on the larger meaning of the findings and includes the subjective bias and flexibility of the researcher (ibid.). The appropriateness of this approach is discussed in detail under the associated research design described in the following section.

3.3 QUALITATIVE RESEARCH DESIGN

3.3.1 Case study

This research is a case study investigating the application of management accounting techniques in the risk management process of the case organisation, Fedan Investment Limited. Case study, as a qualitative inquiry, is one of the five qualitative research approaches described by Creswell and Poth (2018:8-12). Others approaches are narrative research, phenomenology, grounded theory and ethnography. In defining qualitative research, the authors place more emphasis on the design and the application of the distinct approaches. Case study research is associated with a real-life study of a case or cases consisting of an entity such as an individual, an organisation, a specific project, a decision process or even a relationship in a contemporary setting or context (Creswell & Poth, 2018:96).

Creswell and Poth (2018:96-98) view case study research as a methodology and thus included the following in their definition of the characteristics of qualitative case studies:

- The case being studied could be an intrinsic case (case or cases of unique interest that require detailed description) or an instrumental case (case or cases being studied to advance a better understanding of a specific issue or problem).
- Case studies rely on multiple sources of qualitative data for in-depth understanding of the case or cases (e.g. interviews, observations, document reviews and audio-visual materials).

This research is an instrumental case study (a single case) undertaken to advance a better understanding of the relevance of management accounting techniques in enhancing the risk management system of an organisation (the case company) (Creswell & Poth, 2018:102-103).

3.3.2 Sampling method

The nature and quality of data required to answer the research questions and address the research problem determined the criteria that were applied to identify potential research participants from the pool of the company's workforce. Hence, relevance of position, academic/professional background and years in the service of the company were applied to identify the potential questionnaire respondents and interview participants. The case company has approximately 100 members of staff (as at the time of planning this study) who are engaged in different units and in diverse activities of the company. However, very few individuals met the criteria. Five (5) senior management officials (through their specialist status and/or high-ranking management levels) were identified and requested to be questionnaire respondents and more importantly, to be interview participants. Twelve (12) middle-level officials were identified and requested to participate as questionnaire respondents. Thus, seventeen (17) requests were made, from which ten (10) officials accepted to participate in the study (four senior officials and six middle managers).

Although their names and specific designations were excluded from the analysis to maintain anonymity (see Section 3.4), the intended research participants (interviewees in particular) were all directly connected either by function or supervisory role to the company's operations and processes that were relevant to this study. Thus, the researcher considered the set of officials information-rich and potential sources of rich and sufficient data to complete the study successfully. The method applied in selecting the participants for this study could, therefore, be referred to as "purposeful sampling". The justifications for adopting this sampling method and the way the method was applied are reflected in the following paragraphs from the perspective of related literature.

Qualitative research requires an in-depth study of a case, cases or the central phenomenon, and the ability of the researcher to fulfil this diminishes with the increase in the number of participants or study sites (Creswell, 2014:231). Hence, selecting a few cases or a smaller number of participants is typical in qualitative studies. Moreover, the research sites or participants are usually selected purposefully, and the selection is based on the researcher's evaluation of their potential to provide the information that is required to address the research problem. This is referred to as purposeful sampling (ibid.).

The term ”purposeful sampling” is mainly associated with qualitative studies and can be referred to as qualitative sampling (Creswell, 2014:228; Patton, 1990:169). Since the researcher requires sufficient information for an in-depth analysis of the case or cases, the criteria applied in selecting the sites or individuals to study the central phenomenon must reflect how information-rich the potential sites or the participants are as a rationale for their inclusion in the study (Creswell & Poth, 2018:102-103).

In relation to sampling in a single-case research (within-case sampling), Miles, Huberman and Saldana (2014:33) posit that a qualitative researcher has the option of using role and inter-role designations, times, events, processes or activities as the criteria for selecting research participants.

3.3.3 Data collection

3.3.3.1 Systems and policies in place

The systems and policies in place in the case company were checked directly by the researcher (observations, enquiries and review of available documents). The systems/policies are reported in Section 4.2 in terms of strategy leanings, risk management function and MAPs. The findings in this regard were associated with the questionnaire responses to facilitate the interview questions and subsequent analysis/discussion of the interview responses, thus contributing to the reliability of the research data (see Section 3.3.5).

3.3.3.2 Questionnaire

Before approaching the respondents for interview sessions, the researcher administered structured questionnaires to ascertain (in association with the direct assessment of the systems and policies in place) (Section 3.3.3.1) the extent of application of management accounting techniques and to assess the company's risk management culture. The outcome of these assessments provided the leads for the review of the interview questions, particularly the initial set of questions. Thus, the questionnaires were not applied as the main instrument of the study. The use of structured questionnaires is mainly associated with large numbers of respondents (as in quantitative studies). However, the researcher considered its use in this study beneficial in (conveniently) providing specific leads (indicated earlier) for interviewing select members of senior management (Creswell, 2015:3; Keats, 2000:20; Miles, Huberman & Saldana, 2014:73).

Miles, Huberman and Saldana (2014:73) posit that information from questionnaires, surveys or statistical records can be applied in a qualitative study. This combination is applicable, provided the rationale is adduced (Keats, 2000:20).

3.3.3.3 Interviews

To provide a comprehensive description of how the company's risk management process could be improved within the context of the application of relevant management accounting techniques, the researcher conducted interviews with select members of the company’s senior management who were considered information-rich by virtue of their positions, qualifications, area of specialty and years of experience. Those interviewed had indicated their interest in the study and had offered to participate. This approach provided the researcher with the opportunity to obtain broad and in-depth information regarding the company’s management control system, risk management process and its application of management accounting techniques. In addition, information relevant to how management accounting techniques could be applied to improve the company’s risk management process was obtained.

The interviews conducted for the purpose of this study qualified as qualitative interviews (Yin, 2016:141-143). Qualitative interviews are predominantly applied in qualitative studies. In qualitative interviews, the interaction between the researcher (interviewee) and the participant is not strictly scripted. According to Yin (2016:142),

> No questionnaire contains the complete list of the specific questions to be posed to a participant. The researcher will have an implicit agenda of study questions and may be following a research protocol, but the questions as actually posed to any given participant will differ according to the context and setting of each interview.

Moreover, the more important questions asked during qualitative interviews are typically open-ended questions that allow the participants to communicate their opinions and experiences using their own words rather than limit their responses to single-word answers. This provides opportunities for the researcher to ask follow-up and probing questions and thus engage the participant in a topical discussion.

Accordingly, the interview questions and the process were not strictly scripted, allowing some degree of flexibility that enabled the researcher to refine and prioritise certain questions in response to time constraints, emerging trends and circumstances. However, the interview questions (ANNEXURE F) reflect a reasonable degree of consistency. The questions were developed from the interview content and process (ANNEXURE D), which served as a general guide. Marshal and Rossman (2016:151) posit that flexibility does not imply researchers conducting interviews without a set of general questions to serve as a guide.

The interviews enabled the researcher to gain an in-depth understanding of how useful applying relevant management accounting techniques could be in the risk management process within the context of the company's business operation. The data collection was enhanced by the opportunities that the interviews provided for the researcher to ask follow-up questions. Interviews provide opportunities for follow-up and probing questions that are potentially useful in gathering rich, descriptive evidence (Armitage, Webb & Glynn, 2016:32; Keats, 2000:20).

The interview participants were provided with the details of the questions for which their opinions were required. The participants were also issued with the definitions of terms. Efforts were made during the interview sessions to reintroduce and explain the terms associated with each question to ensure that each participant was in accord with the researcher.

3.3.4 Method of analysis

In analysing qualitative data, the researcher generates constructs or labels referred to as codes in order to describe, infer or attribute meanings to each determined unit of the text data; these codes can range from single words to paragraphs or even to full pages of text (Miles, Huberman & Saldana, 2014:70-72). The codes can then be applied to cluster-related data segments associated with a particular theme, pattern, research question or hypothesis to enable the analysis of the research results and the drawing of conclusions (ibid., p. 72).

In this study, the interview responses (transcribed from audio recordings and reviewed from field notes) were not coded using the typical single terms or short phrases (Miles, Huberman & Saldana, 2014:82-84). Rather, constructs or descriptive terms reflecting particular elements of the research questions were applied to categorise related units or excerpts from the responses under the relevant cluster of the research questions (see Section 2.1). This provided for the analysis of the research results, the drawing of conclusions and the presenting of recommendations on how the company can improve on its process of managing risks within the context of the application of appropriate management accounting techniques (ibid., p. 72). This method of analysis is described as content analysis.

According to Keats (2000:80) and Miles, Huberman and Saldana (2014:71), content analysis involves the consideration of the nature of textual documents (e.g. transcribed interview responses) and directing the level of analysis to words, phrases, statements or themes, which are then categorised according to the chosen criteria or unit of measurement. Content analysis can be performed manually (as in this research) or with the aid of a computer program (Creswell, 2012:239-241; 2014:266; Keats, 2000:80). The application of this method in a qualitative analysis (as in this study) is justifiable (Creswell & Poth, 2018:8; Denzin & Lincoln, 2011:3). The main objective in applying a qualitative analysis is to transform qualitative data into research findings. Various methodologists have provided useful guidance for this (e.g. Creswell, 2014; Creswell & Poth, 2018; Miles, Huberman & Saldana, 2014; Yin, 2016). However, no universal formula applies to this data transformation and hence, the result or the final destination that is unique to each researcher is only clear when it is achieved or reached (Marshal & Rossman, 2016:217).

Moreover, it is advisable for the qualitative researcher to commence the analysis while the data collection is on-going. This, according to Miles, Huberman and Saldana (2014:70), gives the researcher the opportunity to "cycle back and forth between thinking about the existing data and developing strategies for collecting new, often better, data". This was applied in the current study, providing the researcher with the opportunity to refine and prioritise questions for subsequent interviews.

3.3.5 Data validity and reliability

The validity of a research and its findings and the reflection of a strong sense of trustworthiness bring more credibility to the research process and its output (Yin, 2016:86 & 88). Clearly reporting the steps (as in this chapter) taken to execute a study, the associated challenges (as indicated in Section 4.1) and how the researcher addressed the challenges create a great sense of trustworthiness (Yin, 2016:86).

The validity of a study refers to the effectiveness of the data collection instrument and the appropriateness of the data analysis and its interpretation in providing for the conclusions that reflect or represent the context studied and the true experience in the study setting (Keats, 2000:77; Yin, 2016:88). Although complete validity cannot be guaranteed in any study, validity in a qualitative research can be strengthened through consciousness of the potential threats to validity during the design of the study (Maxwell, 2013:126-129; Yin, 2016:89). In this study, the following efforts were made to strengthen validity and to reflect a great sense of trustworthiness:

- Various publications on related theoretical concepts and the findings of relevant studies were reviewed and cited. Moreover, the methodologies applied in related empirical studies were considered. The researcher strengthened his interaction with the potential participants (researcher-participant cordiality) and displayed a good sense of commitment to preserve their anonymity. The researcher reflected on his prior experience in the company, his knowledge of its workings and the information gathered from available documents during the design phase and the execution and reporting of the study. Furthermore, the researcher made follow-up enquiries with the research participants, and the challenges encountered during the data collection are well documented (see Section 4.1).
- Regarding the interview sessions, each interview participant was provided with a list of applicable general questions and definitions of terms prior to the interview date. Time was also taken during the interview to explain the questions and the associated terms to ensure that the researcher and the

participant were in accord. Moreover, some responses to the questions reflected responses to prior questions posed to the same participant or the responses obtained from other participants in previous interviews. Thus, all responses (initial and follow-up) relating to each aspect of the research questions were analysed together to strengthen data validity. According to Keats (2000:77), reliability can be demonstrated by either repeating an interview on a later date and comparing the responses or by examining the content and context of responses to earlier questions posed in another way.

- The analysis of the data included a description of the systems/policies in place in the company. This was as checked directly by the researcher (prior knowledge, observations, enquiries and review of available documents) as associated with the questionnaire responses to provide for the review of the interview questions and subsequent analysis of the participants' responses to the interview questions (see sections 3.3.3.1 and 4.2). According to Creswell and Poth (2018:96-98), accessing qualitative data from multiple sources (e.g. interviews, observations, document reviews) improves data reliability.

3.4 ETHICAL CONSIDERATION

According to Miles, Huberman and Saldana (2014:56), "we cannot only focus on the quality of the knowledge we are producing … We must also consider the potential dangers of our actions, as qualitative researchers, in relation to the people whose lives we are studying." They posit that qualitative researchers act responsibly by considering and attending to ethical issues before, during and after the study. Major ethical issues to consider are the preservation of the anonymity of participants and their protection from physical and mental harm (see Creswell & Poth, 2018:182; Miles, Huberman & Saldana, 2014:56).

The researcher considered and respected the confidentiality of the research participants during the course of the study by the following actions:

- Requested and obtained the approval of the case company to conduct the research.
- The questionnaire (Annexure B) and the interview content (Annexure D) as the instruments of data collection for the study together with the approved research proposal were reviewed and cleared by the Ethics Committee of the Tshwane University of Technology (see Annexure A).
- The consent of each research participant was sought and obtained before inclusion in the study, and each participant was provided with the details of the research ethics information and informed consent (annexures C and E) prior to participation.
- As required by the ethical provisions of the university, the researcher ensured that the rights and confidentiality of the research participants were protected before and during the study and in reporting the results. Thus, interviews were held privately in each participant's office, and the interview date and time were determined by the participant to avoid undue interference with his/her office functions. Moreover, due care was taken during the data analysis to maintain the anonymity of the respondents (see Creswell & Poth, 2018:182-183).

The researcher further ensured that the study complied with the recognised standards of scientific competence that are required for this type of research and that the outcome of the study was free from personal bias and plagiarism.

3.5 CONCLUSIONS

The details of the qualitative approach and the qualitative design applied in this study have thus far been examined, and the rationale behind the choice of the approach has been fully reflected. It was noted that this study focused on a single case (the application of management accounting techniques in the risk management process of Fedan Investment Limited) and demonstrated how management accounting techniques could be applied to improve the company's risk management process. It was thus appropriate to adopt the qualitative research design as described in this chapter. The qualitative approach informed the choice of the 17 company officials who were requested to participate in the study. The following chapters present the detailed analysis of the primary data, the conclusions reached and the recommendations made.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION OF RESEARCH RESULTS

4.1 INTRODUCTION

In Chapter 3, the rationale for the research design as applied in this study was discussed and affirmed. It was established that the interview is an appropriate data collection method for this type of research. In this chapter, the data from the interviews that were held with the research participants are analysed. The interview analysis is preceded by a description of the systems that are in place in the case company and a summary of the analysis of the structured questionnaire that was administered prior to the interviews. The questionnaires afforded an overview of the company's management accounting system and risk management culture and conveniently provided a lead for interviewing the selected participants.

The researcher approached the company and made a formal request for permission to conduct the study. Permission was granted on 21 November 2017. Following the company's approval, an application for ethical clearance for the applicable research instruments was sent to the Ethics Committee of the institution. The request was considered and the approval, dated 31 May 2018, was received on 23 July 2018. In conducting the study, the categories of potential respondents were defined in advance (purposeful sampling) to enable the researcher to obtain a list that matched the study needs (see Section 3.3.2). Although participation was voluntary, the company encouraged its officials to take part in the study. The data collection (and subsequent follow-up enquiries) was brought to a close on 31 December 2019.

In total, 17 company officials were requested to participate in the study, of whom five senior-level management officials were asked to grant interviews (Section 3.3.2). Participation in the study was completely voluntary as disclosed in the ethical consideration (see Section 3.4 and annexures C and E), and each potential participant was duly informed of the ethical aspects of the study. Ten (10) officials of the company accepted the request to participate in the study—four (4) senior officials and six (6) middle managers. The researcher obtained eight (8) questionnaire responses and conducted four (4) oral interviews and one (1) follow-up interview, that is, eight (8) questionnaire respondents, of whom three (3) granted interviews, with one (1) granting an additional follow-up interview, thus totalling four (4) oral interview sessions. Each session lasted between 45 minutes and one hour. All the interviews were one-on-one and were conducted at the offices of the participants. Three interviews were audiotaped and transcribed while one was conducted using only the field notes. Enquiries, made via the telephone and email before and after the interviews to enhance the understanding of the workings of the company and to support the data collection and analysis, were not included as part of the interviews.

The number of questionnaire respondents and interview participants would have been higher but for the resignations/exit of two officials (one senior and one middle level) who initially had accepted to participate in the study. These officials could no longer participate because they had left their positions and were no longer in the services of the company. Moreover, three of the interviewed participants were not favourably disposed to being engaged in further interviews via telephone or email and thus, the researcher was only able to conduct one follow-up interview. Notwithstanding these limitations, the resultant questionnaire respondents and interview participants fairly represented the target categories in terms of management level, specialist area and duration of engagement with the company. Therefore, based on the qualifications, positions, area of speciality, years of experience of the actual research participants and the depth of the interview discussions, the researcher is of the opinion that sufficient data was collected to provide a reasonable and acceptable conclusion regarding this research. The views and opinions of a small number of research participants expressed in words suffice as sufficient data in a qualitative study (see sections 3.2 and 3.3). To strengthen this argument, it should be noted that the actual interview participants are all connected directly by function or by supervisory role to the relevant company's processes and systems (Section 3.3.2).

All the interviews were transcribed into text and analysed accordingly, and every effort was made during the analysis to preserve the anonymity of the participants (see Section 3.3.4) as described in the ethical provisions. The transcription for the interview that was not audiotaped represents the completed and reviewed self-designed field notes, appropriately marked for the study. In the analysis, related themes identified from the interview responses were associated with the relevant cluster of research questions (see Section 2.1). Although the list of interview questions (Annexure F) developed from the approved interview content (Annexure D) is attached for possible reference to the interview questions, the names and the designations of the interviewees, including the full transcriptions of the interview responses, are not provided. This is done to preserve the anonymity of the participants according to the ethical provisions guiding this study (see Section 3.4). However, all excerpts from the responses considered relevant in answering the research questions are included in the analysis. The interview questions were not strictly structured (see Section 3.3.3.3). This flexibility allowed for refining and prioritising some of the questions in response to time constraints, emerging trends and circumstances. Therefore, each sub-section of the analysis does not necessarily include responses from the four interview sessions. Only responses relating to the specific unit of analysis are included. In this chapter, every reference to the list of interview questions (Annexure F) is as shown in Table 4.1.

Table 4.1: Referencing interview questions

Interviews	Question number	Sub/follow-up questions
A–D	1, 2, 3 …	I, II, III …

Furthermore, it should be noted that this study is focused on a single organisation, Fedan Investment Limited, Lagos (the case company). Therefore, the results of the study are not intended for universal application. However, the concept of transferability of the results of this research may be valid where and when the situation and conditions are sufficiently similar to the case being studied. This analysis starts with the description of the relevant systems/policies that are in place in the company, which were checked directly by the researcher (Section 3.3.3.1). The descriptions of the systems in place were associated with the questionnaire responses to refine the interview questions and together with the literature, enabled further analysis and discussion of the research findings (see Chapter 5).

4.2 THE COMPANY: SYSTEMS AND POLICIES IN PLACE

4.2.1 Strategic policies and leanings

The company's strategic position leans towards differentiating its products (brands) from that of its competitors by means of higher quality and dependability, pioneering customer preferences, product availability and customer loyalty rewards. However, the market condition and the nature of the operating environment make it impossible for the company to pursue this strategy in isolation. Thus, the company's policies or leanings in respect of strategic positions include 'cost leadership' and 'focusing strategy' (see Section 1.11 and Section 2.3.3 regarding 'Performance Measurement System'). It is, therefore, the company's policy to maintain some brands that compete mainly on the basis of relatively low prices. Moreover, the company's policy on strategic position includes the identification of customer segments or locations that require specialised services. The company's ability to design and develop its brands for production by overseas partners places it in the position to pursue these strategies successfully.

4.2.2 Risk profile, risk management policy and function

The company is a fully engaged (branded) merchandising business with competences in designing its own products for production by its overseas production partners and implementing subsequent repairs and quality improvements. The repairs, quality checks and quality improvements are handled by the company's quality control and technical unit. The company operates in a highly competitive environment. The complex nature of its business (high exposure to changes in fashion and customer preferences), risk of product obsolescence and fall in expected market performance of products constitute the major risks inherent in its operation. Moreover, the company carries high inventory volumes, maintains several structural units, multiple processes, branches and outlets and processes high transaction volumes. These are all associated with varying degrees of complexities, which in combination with the volatile operating environment are considered the key risk factors of the company. Therefore, the adoption of measures and the improvement of existing processes to ensure proper management and mitigation of the likelihood and the financial impact of the exposures inherent in the operation of the company are required.

The company under study does not have a formal risk management process, which would be evidenced by the existence and maintenance of a risk register or a separate risk function/department besides line management (Fajemirokun, 2016:34-40). However, some managerial and operational procedures of the company (e.g. internal audit procedures, internal control measures and company policy in relation to employee conduct and welfare) can pass as risk identification and mitigation mechanisms for certain operational risks (see Section 2.2.1.2) (Scott, 2019). Moreover, regular board and senior management meetings provide opportunities for deliberations that could qualify as risk discussions, enabling the management to act in a proactive manner. Proactive and corrective actions of the company could come as improvements and changes in the internal control procedures and other system adjustments.

4.2.3 Management accounting systems and practices

Management accounting systems are traditionally concerned with the provision of financial information for internal use but the usefulness of its output, especially in directing managerial attentions to problem areas, is enhanced with the incorporation of external and non-financial data (see sections 1.1., 2.3.2 and 2.4.2). The management accounting systems of the company consist of its financial accounting system, internal audit function, cost accounting function, budgeting unit and operational information from stores (inventory control), sales/marketing, human resources, quality control and IT units. The management accounting systems also include management reports by consultants and information from external sources such as competition and market position, financial system, changes in government policies and operations of the overseas partners.

The financial accounting system, internal audit function, cost accounting function and the budgeting unit are, respectively, managed by the company's Chief Accountant, Chief Internal Auditor, Cost Accountant and the Budget Officer. Other departments and units are managed by their respective heads. The department and unit heads individually report to the Managing Director (MD) in the format indicated by the MD and as often as determined by the MD. In most cases, the heads report through the responsible senior management official, for example, the Cost Accountant and the Budget Officer reporting through the Chief

Accountant. The highlights of these reports are usually included in the items of discussion at the meetings of the executive directors/senior management.

The budgeting system is yet to become fully operational, and the challenges associated with the running of the company's financial accounting system affect its ability to generate timely, integrated and aggregated financial information. Moreover, the services of external consultants are often engaged (on an ad hoc basis) to cover the managerial accounting reporting needs. In relation to strategic cost management, applicable when opportunities are identified for cost reduction or quality improvement, the risks posed by the competitive nature of the business environment often compel the company to adopt techniques such as target costing, value analysis and reverse engineering.

4.3 ANALYSIS OF THE QUESTIONNAIRE

4.3.1 Relevant management accounting and risk management practice statements

The questionnaire respondents largely acknowledged the relevance of the stated MAPs (as presented in Table 4.2) in minimising uncertainties associated with business decisions and thus increasing the likelihood of success.

Table 4.2: Analysis of questionnaire responses: Management accounting practices

S/N		DESCRIPTION OF MANAGEMENT ACCOUNTING PRACTICES	AGREE	DIS-AGREE	NONE
1		Setting of long-term (strategic) goals in pursuance of the company's vision and	8	0	0

S/N		DESCRIPTION OF MANAGEMENT ACCOUNTING PRACTICES	AGREE	DIS-AGREE	NONE
		providing the leadership to put these goals into effect			
2		Supervising the operations of the company by management and enabling periodic reporting of activities, especially in relation to profitability and liquidity	8	0	0
3		Implementing a visible cost accounting system to provide a framework for ascertaining the cost of each product, activities, units, branches, etc. for profitability analysis, inventory valuation, cost control and planning	7	0	1
4		Implementing a formal process of regularly setting periodic financial and performance goals with budgets and always carrying out a quantitative investigation of the difference between actual and planned performance	7	1	0
5		Maintaining a comprehensive performance measurement system that provides a framework for reporting not only financial performance but also customers' levels of satisfaction and future needs, improvements in the internal operating processes, and employee learning and growth	7	0	1
6		Evaluating the viability of major capital expenditure proposals to provide a documented basis for decisions	7	0	1
7		Performing a sensitivity 'what if' analysis with budgets and capital expenditure proposals, especially in relation to the effects of political, economic, social and technological factors	5	1	2
8		Defining the nature, content and the frequency of management accounting and internal audit reports	8	0	0

PERCENTAGES APPLICABLE TO THE NUMBER OF RESPONSES								
NO. OF RESPONSES	1	2	3	4	5	6	7	8
PERCENTAGES	13%	25%	38%	50%	63%	75%	88%	100%

S/N: According to the questionnaire listed in Annexure B

The respondents significantly **agreed** with the stated risk management and management accounting practice statements in relation to the company (see Table 4.3).

Table 4.3: Analysis of questionnaire responses: Risk management and management accounting practices (a)

S/N A	S/N B*	RISK MANAGEMENT AND MANAGEMENT ACCOUNTING DESCRIPTIONS	AGREE	DIS-AGREE	NONE
1	9	**Risk** is involved in conducting any type of business anywhere in the world. It represents the degree of uncertainty associated with the expected outcome of any activity. The company accepts risks when doing so contributes to value creation or leads to the achievement of desired goals.	7	1	0
2	11	The management is aware of the company's strengths, weaknesses, opportunities and threats as they arise.	5	1	2
3	12	The company regularly reviews its business plans in respect of impacts of risks on the critical activities associated with the execution of the plans.	3	2	3
4	13	Administrative, selling and distribution expenses are not the only overheads in the company's cost structure. There are overheads associated with the process of bringing the products into saleable conditions and overheads associated with quality improvements of the products.	7	0	1
5	14	Overhead absorption rates and the direct costs of products form the basis for setting or reviewing product prices.	6	0	2
6	15	The company has no formal system or prescribed method for setting and reviewing selling prices.	5	2	1
7	17	Major capital projects are not implemented without a properly documented evaluation and financial analysis.	4	1	3
8	18	The company regularly analyses its competitive position and initiates programmes to ensure a boost in its market share.	7	1	0
9	19	Types, nature, content and the frequency of periodic management accounting reports and internal audit reports are well defined and documented.	7	0	1

PERCENTAGES APPLICABLE TO THE NUMBER OF RESPONSES

NO. OF RESPONSES	1	2	3	4	5	6	7	8
PERCENTAGES	13%	25%	38%	50%	63%	75%	88%	100%

S/N B* is the serial number according to the questionnaire listed as Annexure B

The questionnaire respondents, however, significantly disagreed that the company has an approved risk management policy and tolerable risk criteria with clear and identifiable key risk indicators. Moreover, the responses indicated indecision regarding whether or not the company has a documented budgeting process and a budgetary control procedure (see Table 4.4 for details). These findings are further reflected in Section 4.4: Analysis of the Oral Interviews and discussed in Chapter 5 together with the systems in place as checked directly by the researcher.

Table 4.4: Analysis of questionnaire responses: Risk management and management accounting practices (b)

S/N A	S/N B*	RISK MANAGEMENT AND MANAGEMENT ACCOUNTING DESCRIPTIONS	AGREE	DIS-AGREE	NONE
1	10	The company has an approved risk management policy and tolerable risk criteria with clear and identifiable key risk indicators.	1	4	3
2	16	The company has a documented budgeting process and budgetary control procedure.	3	3	2

S/N B* is the serial number according to the questionnaire listed in Annexure B

Table 4.5 below displays the ‘total disagreement’ responses in relation to the management levels of the questionnaire respondents and their departments or specialist areas. The analysis is necessary to assess or to confirm the weight of each ‘total disagreement’ response to the questions in the questionnaire.

Table 4.5: Analysis of 'total disagree' responses >1

TABLE	TABLE S/N	ANNEXURE B S/N	TOTAL DISAGREE COUNT	TOTAL DISAGREE %	MANAGEMENT LEVEL SENIOR	MANAGEMENT LEVEL MIDDLE	TOTAL	DEPT./SPECIALIST AREA ACCTS	DEPT./SPECIALIST AREA AUDIT	DEPT./SPECIALIST AREA SALES*	TOTAL	
					3	5	8	4	2	2	8	max
Table 4.4	1	10	4	50%	2	2	4	2	2	0	4	
Table 4.4	2	16	3	38%	2	1	3	1	2	0	3	
Table 4.3	3	12	2	25%	1	1	2	0	1	1	2	
Table 4.3	6	15	2	25%	1	1	2	1	0	1	2	

*SALES = Sales and admin

max = maximum number of respondents

The number of years in the company is not included.

The number of years in the service of the company for the questionnaire respondents ranges from five years to more than ten years. Hence, the researcher considered the service years of each research respondent sufficient to elicit meaningful contributions to the study. The following are insights from Table 4.5 above:

- For the first item, the exclusion of the three neutral responses (see Item 1, Table 4.4) makes the 50% ‘total disagreement’ responses sufficiently strong in terms of count, management level and specialist area to indicate that the company has no approved risk management policy and no tolerable risk criteria with clear and identifiable key risk indicators.
- In relation to the balanced response (Item 2, Table 4.4), the management level and specialist area associated with the 38% ‘total disagreement’ responses indicate the company is more unlikely to have a documented budgeting process and budgetary control procedure. As stated earlier,

these findings are further reflected in Section 4.3: Analysis of the Oral Interviews and discussed in Chapter 5 together with systems in place as checked directly by the researcher.

- The ‘total disagreement’ responses for the last two items in Table 4.4 can pass as minority perspectives (lacking significant weight) in terms of the specialist areas and to a large extent, the management levels of the questionnaire respondents.

4.3.2 Identification of the company’s significant risks by means of their likelihood

The significant risks associated with the company’s operation were identified in the questionnaire responses by their likelihood scale. Furthermore, the analysis of the interview responses provided a form of assessment of the possible financial impact of the significant risks. Table 4.5 is a list of risk events that potentially can influence the objectives of the company; the list was developed from the literature review (see Section 2.2.1.1) and the overview of the company’s operation (see Section 1.1). Table 4.5 also shows the responses (in percentages) regarding the likelihood of occurrence of the risk events under the following frequency scale:

- [5] Happens more than once a year in the company
- [4] Happens about once a year in the company
- [3] Happens every five years or more in the company
- [2] Has only happened once in the company
- [1] Has never happened before in the company
- [0] Do not know

Table 4.6: Description and likelihood of company's risk events

S/N A	S/N B*	RISK EVENT DESCRIPTION	NO. OF RESPONSES TO THE LIKELIHOOD OF OCCURRENCE: [5] TO [0] (REFER TO THE SCALE ABOVE)					
			[5]	[4]	[3]	[2]	[1]	[0]
1	23	Failure of company's product in the market due to defects, obsolescence, competitive pressures, etc.	5	0	0	1	1	1
2	20	Major disruption in activities due to operational inefficiencies such as limitations in procedures, software, IT and other technical failures, human errors and mistakes	4	1	0	0	0	3
3	22	Major disruptions in operation and loss of revenue due to failures on the part of suppliers/producer partners	3	0	0	1	2	2
4	28	Increase in cost of operation due to scarcity of essential products or services (e.g. petroleum products and transport services)	2	2	0	2	1	1
5	29	Bad debt losses, contested customer balances and prolonged debt recovery	2	0	1	2	1	2
6	21	Liabilities and other losses due to non-compliance with tax laws, statutory reporting requirements and environmental regulations	2	0	0	2	3	1
7	24	Loss of major customer(s) to other competitors	2	0	0	2	3	1
8	26	Losses and increased liabilities due to scarcity of foreign exchange and rate fluctuations	1	2	0	3	1	1
9	27	Losses and increased liabilities due to unfavourable changes in Central Bank of Nigeria (CBN) Monetary Policy Rate (MPR)	1	0	1	2	1	3
10	25	Loss of major customer(s) due to political and economic crises, unrest, terrorism, etc.	0	1	0	3	3	1
11	30	Closure of operational segment or branch due to unfavourable changes in laws and regulations and political and other crises or due to inability of the segment or branch to generate sufficient revenue to cover cost	0	0	0	5	2	1

PERCENTAGES APPLICABLE TO THE NUMBER OF RESPONSES								
NO. OF RESPONSES	1	2	3	4	5	6	7	8
PERCENTAGES	13%	25%	38%	50%	63%	75%	88%	100%

The company's risk events are arranged in Table 4.6 in order of their assessed likelihood of occurrence according to the questionnaire responses. The assessment of the questionnaire responses in this regard provided a lead for prioritising the oral interview questions relating to the significant risks associated with the company's operation and their possible financial impact. Thus, the structured questionnaire was not the main instrument of data collection. As stated earlier, interview sessions were held with purposefully selected participants to provide in-depth insight into the research subject (see Section 3.3.3.2).

4.4 ANALYSIS OF THE ORAL INTERVIEWS

4.4.1 Analysis of responses relating to the identification of the company's key risks and the applicable risk management process

4.4.1.1 Interview responses regarding product failure due to defects, obsolescence and competitive pressures

It was stated in Section 2.2.1.1 that the risks associated with the company's operation could include product failures due to defects, obsolescence and competitive pressures. Table 4.7 below presents a summary analysis of the interview responses relating to the risk of product failure as a significant risk associated with the company's operation. As stated in Section 4.1, related themes identified from the interview responses are associated (in this analysis) with the relevant cluster of the research questions.

Table 4.7: Analysis of findings regarding the risk of product failure

Interview question ref. (according to Table 4.1)	Risk description/likelihood/impact	Notes/ remarks
A1, B5, B7.	Yes, that stands as the most important risk of the company	
A1	Lots of money lost due to obsolescence, including possible overstatement of inventory and attendant consequences	Obsolescence
B5	High likelihood of competitors' rival strategies adversely affecting the performance of our products	Competitive pressure
A1, B7, C2	Suppliers are hardly faulted in terms of defects—fall in quality expectation.	Defects

The interview question reference (first column) is according to the descriptions provided in Table 4.1. Statements or themes that are relevant in describing how 'the risk of product failure' qualifies as a significant risk inherent in the business operation of the case company (see Section 3.3.4) were identified **only** in the following responses to the interview questions:

- Response to Question 1, first interview (A1)
- Response to Question 5, second interview (B5)
- Response to Question 7, second interview (B7)
- Response to Question 2, third interview (C2)

Except for a fall in quality specification (manufacturing defects), no statements or themes representing contrary perspectives were found in the interview responses. Moreover, the interview process and the interview questions were not strictly scripted. This allowed some degree of flexibility, enabling the researcher to refine and prioritise certain questions in response to time constraints, emerging trends and circumstances (see Section 3.3.3). Thus, related themes were not necessarily identified in all the responses of the four interviews that were conducted.

The second column, risk descriptions/likelihood/impact, presents a summary of the findings from the interview responses relating to ‘the risk of product failure’, a significant risk associated with the operation of the company. The third column (Notes/Remarks) represents the association of the risk of product failure with obsolescence, competitive pressure and defects.

The details of the findings, which include direct and paraphrased excerpts from the listed interview responses, are analysed in the following paragraphs.

Response to A1

Failure of the company’s products in the market due to defects, obsolescence and competitive pressures qualifies as the most important risk for the company, considering the likelihood of occurrence and the possible financial impact. The company has indeed suffered significant losses in financial value as a result of obsolete (impaired) items. The obsolete items often lead to overvaluation of asset of inventory, profit overstatement and higher tax liability.

Responses to B5 and C2

In respect of the competitive nature of the business, it is not unlikely for the company’s competitors to implement rival strategies that could adversely affect the performance of the company’s products. It was reported in the review (see Section 2.3.1) that risk management is fast becoming a core function in the managerial process due to the increasing competition and complexities associated with the global business environment and the need for business survival. Excerpts from the responses to B5 and C2 are as follows:

[O]kay, take for instance where somebody—you have a product, and you've pushed already to the market. Before you know it, somebody also has gone to produce the same thing and still push to the market ... So it's a risk. We consider it as a risk in our type of business.

The performance of our products is not same across board; it varies according to each product's market rating and the associated competitive pressure. For instance, we have items that excel in the market by means of price advantage [cost leadership], and by extension, their relatively high quality. The majority of customers in this business are quite sensitive to price. Although consistent quality is advantageous, especially for a long-term customer relationship, competitive price is a critical success factor.

Responses to A1, B7 and C2

In respect of product defects, the company has not recorded significant issues with the suppliers (producer partners). The suppliers have never been faulted on the issue of product quality (according to responses to A1 and B7). An excerpt from response to C2 follows:

[W]e design our products. The manufacturers are our producer-partners. That is, they produce according to our design and required quantity and then ship down to us.

The relevant themes/statements from responses to A1, B5, B7 and C2 could, therefore, indicate that the risk of product failure due to obsolescence and competitive pressure qualifies as the most important risk inherent in the business of the case company. However, 'failures on the part of the company's producer-partners' is not a significant factor in the overall risk of product failure.

4.4.1.2 Interview responses relating to major disruptions in activities

It was stated in section 2.2.1.1 that the risks associated with the company's operation could include disruptions in activities and revenue due to operational inefficiencies such as limitations in procedures, IT and other technical failures, human errors and mistakes in addition to possible external factors. Table 4.8 below presents a summary analysis of the interview responses relating to the risk of exposure to operational limitations as a significant risk associated with the company's operation.

Table 4.8: Analysis of findings on exposures to operational limitations

Interview question ref. (according to Table 4.1)	**Risk descriptions/likelihood/impact**	**Notes/ remarks**
A2	Failures in accounting and other procedures	Operational risk
B1	Internal control exposures (inventory and cash)	Operational risk
B6(I), B6(II)	Software failures and user capacity challenges	Operational risk

As stated in sections 3.3.4 and 4.1, related themes/statements identified from the interview responses are associated (in this analysis) with the relevant cluster of research questions. The interview question reference (first column) is according to description in Table 4.1. That is, statements or themes that are relevant in describing how 'exposure to operational limitations' qualify as a significant risk inherent in the business operation of the case company (see Section 3.3.4) were identified **only** in the following responses to the interview questions:

- Response to Question 2, first interview (A2)
- Response to Question 1, second interview (B1)
- Response to Question 6 (I), second interview (B6I)
- Response to Question 6 (II), second interview (B6II)

The interview process and the interview questions were not strictly scripted. This allowed some degree of flexibility, enabling the researcher to refine and prioritise certain questions in response to time constraints, emerging trends and circumstances (see Section 3.3.3). Thus, themes or statements relating to the company's exposure to operational limitations were not identifiable in all the responses given in the four interviews that were conducted.

The second column, risk descriptions/likelihood/impact, presents a summary of the findings (from the interview responses) regarding the company's exposure to operational limitations. The third column (Notes/Remarks) represents the categorisation of the company's exposure to operational limitations as 'operational risk'. The details of the findings that include direct and paraphrased excerpts from the listed interview responses are analysed in the following paragraphs.

Response to A2

There is a significant likelihood of errors in the company's procedures, including accounting. This could be associated with poor supervision, low capacity to follow-up supervisory initiatives and gaps in specific skills. The company's effort towards minimising the likelihood of errors in accounting and other procedures is reflected in the area of investing in staff training and retraining.

Response to B1

The following is an excerpt from a response to B1 that relates to the internal control exposures associated with inventory and cash handling:

> *… some internal measures, given the type of business we do. Some internal control measures that has to do with a way of safeguarding the goods we deal on and then the cash transactions … That is the level of the, the things we consider as risk, given our type of business*.

Responses to B6(I) and B6(II)

The increased likelihood of human errors and inefficiency in the company's operations could be related to the challenges associated with the performance of the company's accounting software and the user skill challenges that are related to the frequent changes of the software in use. Excerpts from responses to B6(I) and B6(II) are as follows:

So you see a lot of trial and error; they are there. … [I]t is affecting the business one way or the other because the time we would've used to move forward, we're now using it to put here—put here. Human errors and mistakes: where these things are much—you have pulled the person from one software to another [and] he has to start learning the new one. Being a new software, there's no how you cannot make one or two mistakes … [N]o matter how it is tolerated, it is affecting the organisation.

Thus, the related excerpts/statements from responses to A2, B1, B6(I) and B6(II) could indicate that exposures to operational limitations qualify as significant risks inherent in the operation of the company.

4.4.1.3 Responses relating to credit losses (bad debts), contested balances and prolonged debt recovery

Table 4.9: Analysis of findings on the exposure to credit losses

Interview question ref. (according to Table 4.1)	**Risk descriptions/likelihood/impact**	**Notes/ remarks**
A4(I), A4(II)	The company has sustained substantial losses on customer credit exposures due to absence of effective credit policy and debt-recovery techniques	
A4 (III)	There is a drastic reduction in exposure with the introduction of credit policy and recovery techniques	
Researcher	Exposures can imply a voluntary strategy to compete favourably in the market	

Table 4.9 above shows a summary analysis of the interview responses relating to the company's exposure to credit losses. The interview question reference (first

column) is according to the description in Table 4.1. Excerpts or statements/themes that are relevant in describing the company's exposure to credit losses were **only** identified in the following responses to the interview questions:

- Response to Question 4 (I), first interview (A4I)
- Response to Question 4 (II), first interview (A4II)
- Response to Question 4 (III), first interview (A4III)

The interview process and interview questions were not strictly scripted, allowing the researcher some degree of flexibility to refine and prioritise certain questions in response to time constraints (see Section 3.3.3). Thus, themes or statements relating to the company's exposure to credit losses did not arise in the subsequent interviews.

The second column, risk descriptions/likelihood/impact, presents the summary of the findings (from the interview responses) regarding the company's exposure to credit losses. The details of the findings that include direct and paraphrased excerpts from the listed interview responses are provided in the following paragraphs.

Responses to A4(I), A4(II) and A4(III)

The company has recorded substantial credit losses and efforts have been made to minimise the company's exposure in this regard. An excerpt from one of the responses reads, *Yes, of course, the effect on our books is also significant. We have so many of them that have been written off and some that are yet to be written off*.

These losses were largely due to the absence of an effective credit policy and recovery technique. The company has, however, introduced a credit policy with a recovery technique and this has resulted in a drastic reduction in its credit exposures. Moreover, the issue of contested customer balances is not associated with the operation of the case company.

These credit exposure and losses (credit risk) can be associated with the failure in the company's credit control and management system, thus qualifying as operational risk. They can also be associated with the company's strategy of boosting its customer and revenue base to secure competitive advantage over its competitors. The latter aspect becomes a risk (strategic risk) consciously taken by the company to earn superior returns.

4.4.1.4 Responses relating to risks associated with the company's strategy

Table 4.10: Analysis of findings regarding the risks associated with the company's strategy

Interview question ref. (according to Table 4.1)	**Risk descriptions/likelihood/impact**	**Notes/ remarks**
C1	The company's strategy of investing—to serve new customer and market segments—includes product differentiation and branch operations	
C2	Product differentiation failure is an associated risk	
A5	Revenue growth failure of a branch operation is an associated risk	
A5	Increased operational risk is an associated risk	

Table 4.10 presents a summary analysis of the interview responses relating to the risks associated with the company's strategic leaning. The interview question reference (first column) is according to the description in Table 4.1.

Excerpts or statements/themes that are relevant in describing the risks associated with the company's strategy were **only** identified in the following responses to the interview questions:

- Response to Question 5, first interview (A5)
- Response to Question 1, third interview (CI)
- Response to Question 2, third interview (C2)

Excerpts or statements/themes relating to the risks associated with the company's strategy were not identified in the other interview responses. The second column, risk descriptions/likelihood/impact, presents the summary of the findings (from the stated interview responses) regarding the risks inherent in the company's strategy. The details of the findings that include direct and paraphrased excerpts from the listed interview responses are provided in the following paragraphs.

Response to C1

The company's business is highly competitive, and cost leadership strategy is critical to business success. Product differentiation is also essential for brand uniqueness and the company's goodwill. Moreover, the company's strategy requires investment in identified customer and market segments that present opportunities for the company to compete. An excerpt from response to C1 states,

This business is a highly competitive one and price advantage is essential if we must attract a good number of customers to maintain a strong competitive position. The relatively high quality of our product is another strong factor that builds the company's image and ensures a lasting relationship with our numerous customers. We are also expanding our business to reach different areas and customer segments that we feel are not properly served. Our approach in this regard is to—introduction of new product lines, developing new models of the existing products and opening of branches in diverse locations to make our products more accessible to our customers.

Responses to A5 and C2

In highlighting the risks associated with the company's strategy described above, the responses stated that a branch was closed down because of mismanagement and inefficiency in its operation. However, the branch was later reopened after it was determined that the branch could be restructured to operate efficiently (response to A5). Moreover, it is often uncertain if the company will cover the expenses of a new branch and earn returns in the foreseeable periods of the branch operation (response to A5). Furthermore, the risk of strategy failure is inherent in identifying and investing in new customer segments. An excerpt from one of the responses reads, *[W]e also have some items of high quality and price designed specifically for high-income earners, but those items have not really moved in the market due to the high price*. (Response to C2)

As underpinned in the responses, these are risks associated with the company's strategy. These risks can also be defined in terms of operational and business risks.

4.4.1.5 Responses relating to interest rate changes and foreign exchange fluctuations

Table 4.11: Analysis of findings regarding the interest rate and foreign exchange fluctuations

Interview question ref. (according to Table 4.1)	**Risk descriptions/likelihood/impact**	**Notes/ remarks**
A6(I)	The company has cleared its facilities with the banks; impact of interest rate changes mostly absent.	
A8	Although settlement of production partners is in foreign currency, the impact of rate fluctuations is not considered significant.	

Table 4.11 presents a summary analysis of the interview responses relating to the company's exposure to interest rate and foreign exchange fluctuations. The interview question reference (first column) is according to the description in Table 4.1.

Excerpts or statements/themes that are relevant in describing the company's exposure to interest rate and foreign exchange rate fluctuations were only identified in the following responses to the interview questions:

- Response to Question 6 (I), first interview (A6I)
- Response to Question 8, first interview (A8)

Related excerpts or statements/themes were not identified in other interview responses. The second column, risk descriptions/likelihood/impact, presents the summary of the findings from the stated interview responses.

Responses to A6(I) and A8

The responses, as summarised in Table 4.11 above, clearly indicate that the company is not exposed to fluctuations in the interest rate and foreign exchange rate. This is more apparent in regard to interest rate exposures because of its zero facility with the bank. It is, however, very unlikely for the company to have zero exposure to fluctuations in the foreign exchange rate if it maintains outstanding settlements of its production partners in foreign currency. Hence, the interview responses suggest that the company does not operate through facilities denominated in foreign currencies that are significant enough to make its exposure to fluctuations in the foreign exchange rate a major risk associated with its operation.

4.4.1.6 Responses relating to the increase in the cost of operation due to scarcity of essential products or services

Table 4.12: Analysis of findings on the exposure to scarcity of essential items

Interview question ref. (according to Table 4.1)	Risk descriptions/likelihood/impact	Notes/ remarks
A7(I), B10(I)	High cost of maintenance expenses and other overhead costs are attributable to poor economic infrastructure.	
B8	The cost of production is not affected by scarcity of essential products or services.	
A7(I), B8	Although scarcity of essential products or services may affect the workers and the local transportation cost of products, the overall potential impact on the company's operation is not considered significant.	

Table 4.12 presents a summary analysis of the interview responses relating to the company's exposure to scarcity of essential items. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements/themes that are relevant in describing the company's exposure to an 'increase in the cost of operation due to scarcity of essential products or services' were only identified in the following responses to the interview questions:

- Response to Question 7 (I), first interview (A7I)
- Response to Question 8, second interview (B8)
- Response to Question 10 (I), second interview (B10I)

The interview process and interview questions were not strictly scripted. This allowed some degree of flexibility, enabling the researcher to refine and prioritise certain questions in response to time constraints, emerging trends and circumstances (see Section 3.3.3). Thus, themes or statements relating to the company's exposure to rise in the cost of operations due to scarcity of essential products or services were only identifiable in the responses listed above.

The second column, risk descriptions/likelihood/impact, presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

Responses to A7(I) and B10

Generally, the overhead expenses of the company are notably high, and this is due to the poor and inadequate economic infrastructures.

> *There is no organisation—no organisation runs without overhead. Yes, it becomes a thing of concern if the overhead is on the high … Like here, there are expenses you cannot do without because those expenses are what you need to achieve what you want to achieve. You understand. Like here now, we run … diesel [generator] every other day. We do not use public power supply. So our overhead on diesel is high. Our expense on diesel is high. Our expenses on maintenance are also high. Some of these things, they increase by day, you know …* (Excerpt from response to B10I)

> *It is something we cannot control … Our clearing also is another area that increases cost of operation. Movement of goods from one particular location to another also increase[s] our operational cost*. (Excerpt from response to A7I)

Response to B8

In terms of risk consideration, an increase in the cost of operations due to scarcity of essential products or services does not have a significant impact on the operations of the company. The company's production activities are subcontracted to partner organisations overseas and hence, when such conditions arise, they do not affect the cost of production.

> *Some of those things do not affect us. It does not affect us in as much as we are not doing our production here. We are not producing here. Some of those sudden increments in all this and that [will] only affect the workers because they'll have to pay higher transport fare coming to work. And I will not say also that it'll make them not to come to work. I will not also say that it will make them to come late. So I do not see where it affects us* … (Excerpt from response to B8)

4.4.1.7 Responses relating to product availability

Table 4.13: Analysis of findings on revenue losses due to product stock-out

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
B14(III)	Flexibility required in the system of placing production orders; specific model not conveniently applicable.	
B14(IV), B14(V)	Periodic analysis of product performance is considered in placing orders.	
A3, A6(I), A6(II), B6(II), B7	The risk of losing significant revenue as a result of product stock-out is still inherent in the company's operation.	

Table 4.13 presents a summary analysis of the interview responses relating to the susceptibility of the company to revenue losses due to stock-out of any or all of its products. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements (themes) that are relevant in

describing the company's exposure to the 'risk of revenue losses due to unavailability of any or all of its products' were **only** identified in the following responses to the interview questions:

- Response to Question 3, first interview (A3)
- Response to Question 6 (I), first interview (A6I)
- Response to Question 6 (II), first interview (A6II)
- Response to Question 6 (II), second interview (B6II)
- Response to Question 7, second interview (B7)
- Response to Question 14 (II)–(V), second interview (B14II–IV)

As disclosed in the foregoing analyses, the interview process and interview questions were not strictly scripted, allowing some degree of flexibility that enabled the researcher to refine and prioritise certain questions in response to time constraints (see Section 3.3.3). Thus, themes or statements relating to the company's exposure to 'rise in the cost of operation due to scarcity of essential products or services' were only identifiable in the responses listed above.

The second column, risk descriptions/likelihood/impact, presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

Response to B14(III)

The nature of the company's business does not make it convenient for the company to have an established model or formal system for inventory replenishments.

> *Eh, I think we need it [a formal procedure or model for placing production and supply orders], but why I will not say we need it like that is because this business is a fashion business. You understand. It is a fashion business. You decide it yourself given—based on the demand you are having. Where you have ten product lines and one is going down, there is no way you will continue making production on that, that one that is going down*. (Excerpt from response to B14III)

Responses to B14(IV)–(V)

The responses further show that the company carries out periodic analyses of the performance of its products. These analyses also guide the management in placing production orders.

> *Yea, that we do [periodic analysis of performance of the products]. … we do it from time to time. We know the product that is fast selling. We know the product that is not fast selling …* We *also determine by percentage the one that is more profitable. We determine that too. That also guides us in placing [the] order. Because there would not be any point bringing in those ones you are not making gains on. Only that sometimes, you still have to bring them in a small quantity to … because it is a line of your product ... So you don't go stock-out on them*. (Excerpts from responses to B14IV and B14V)

Responses to A3, A6(I), A6(II) and B7

Nevertheless, the responses reflected the opportunity to increase the company's revenue and market share through product availability.

[T]here has been an increase in sales as a result of increase in customers we have that have come and identified with us. Except for … this issue that we are facing now … this issue of having enough stock to satisfy our customers.

However, the company's suppliers (producer partners) are not responsible for any delayed delivery leading to stock-out of products and revenue losses. The issue is related to the internal working limitations and/or the difficulties associated with the clearing at the port of delivery. Hence, the risk of losing revenue as a result of stock-out of products possesses both internal and external dimensions.

… for here … we don't have any problem with our suppliers. Our suppliers are steady and ready on the job. If there's any delay, it is from our side and not from the suppliers … (Excerpt from response to B7)

[S]uppliers are not responsible. Suppliers are always there. They are responding at any time we place our orders. The issue … is usually at the point of clearing at the seaport … (Excerpt from response to A6II)

Response to B6II

The instance in which the company lost considerable revenue in sales due to extended stock-out of a particular line of products highlights the internal working limitations. Requisitions for the particular line of products were forgotten as a result of over-concentration on a line of products that recorded increased demand. It became a significant loss because the optimal production and supply of the two lines of products were not mutually exclusive. It was an operational limitation, a human error, which could have been avoided or reduced with consideration and provision of relevant and sufficient managerial accounting information, especially in relation to production and delivery cycles, forecast and actual periodic sales and product balances (in both quantities and values).

4.4.1.8 Responses relating to the applicable risk management process

Table 4.14: Analysis of findings regarding the applicable risk management process

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
B1	The company does not have any formal risk management process, especially in relation to ERM.	
A1, A2, A21, B1, B3.	Practices exist that could be considered as risk management functions.	
A1, B6(I-IV)	The company needs to develop a formal risk management process.	

ERM: Enterprise risk management

Table 4.14 shows a summary analysis of the interview responses relating to the risk management process obtainable in the company. The interview question reference (first column) is according to the description in Table 4.1. Accordingly, excerpts or statements (themes) that are relevant in describing the existing and required risk management process of the company were identified only in the responses to the interview questions listed in the first column of Table 4.14 above. The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

The company does not have any formal risk management process or systems, especially when considered from the perspective of ERM (response to B1). However, the company does have concepts, procedures, functions or equivalent practices that can be associated with the process of managing risk. This includes internal control measures that have been implemented to mitigate the exposures relating to the company's assets, especially inventory and cash.

> *I can't say that there is any such procedure of the risk management. The only thing we have is some internal—okay, some internal measures, given the type of business we do. Some internal control measures that has [*sic*] to do with a way of safeguarding the goods we deal on and then the cash transactions and movement …* (Response to B1)

In this regard, the importance of recommendations by the company's external auditors and consultants was also highlighted (response to B3).

The need for proper and adequate supervision of the company's activities, including the building of staff capacity, was well acknowledged in the responses as the right mechanism for mitigating human errors and process failures (response to A2).

In terms of risk identification and awareness, the risk of product failure was acknowledged as the most important risk confronting the company, and the management is making every effort in their own way to mitigate this significant risk. Mitigating the risk of product failure is a key challenge associated with the business of the company:

It is an issue here [product failures due to obsolescence and competitive pressures], and we are trying to see how we can cope with that very problem.
(Response to A1)

It should also be noted that the company endeavours to monitor advancements or changes in the technologies that are associated with their products. Such signals provide a guide for developing new product models and managing the production of the existing models (response to A21).

Notwithstanding the equivalent practices (responses to A1, B6I–IV), the need to develop a formal risk management system for the company that includes the identification and consideration of risks associated with management decisions is well implied in the responses.

4.4.2 Analyses of responses relating to the applicable management accounting techniques and their relevance in improving the risk management process of the company

4.4.2.1 Responses relating to general managerial accounting reporting and other financial analysis

Table 4.15: Analysis of findings regarding general managerial accounting reports

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
B2	The management considers management accounting reports in making decisions.	
B4(I)	The size and the nature of the company's operation require a more sophisticated management accounting information system.	
B3, A7(I)	Management accounting reports from consultants support the ability of the company to achieve its business objectives.	

B6(III–IV)	The risk of revenue losses arising from extended product stock-outs could be mitigated through the consideration of sufficient and more integrated management accounting information.	

Table 4.15 presents a summary analysis of the interview responses relating to the company's general managerial accounting reports. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements (themes) that are associated with the company's general managerial reporting were identified only in the responses to the interview questions listed in the first column of Table 4.15 above. As stated in the previous sections, the interview process and questions were not strictly scripted. This allowed some degree of flexibility that enabled the researcher to refine and prioritise questions in response to time constraints (see Section 3.3.3).

The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

The responses relating to the company's reporting system in regard to general managerial accounting show that internally generated reports serve as lead measures that can guide management's subsequent actions.

> *Yeah, the internally generated accounts or information so to say … informs or guides the management in planning. It stands as a guide to management in planning and forecasting. Where information is generated from [the] accounts department or even the sales department, like you rightly mentioned, the level of sales last month, the level of sales this month, you*

can now make a projection of what the next month will look like. So some of those internally generated information, they are helpful to the management in no small measure. (Response to B2)

In relation to the level of involvement of external auditors or consultants in the management accounting reporting needs of the company, the responses suggest that their reports can influence improvements in the company's internal operating process, especially in relation to operational risk exposures:

[D]uring or after the exercise, they come up with reports of discoveries and also make recommendations. Those recommendations, if go by, will also help the organisation. Because I consider those recommendations as professional recommendations, given the observations they make during the exercise of the audit … (Response to B3)

Some responses suggest that the recommendations of external auditors and consultants can also cover the managerial actions that are required to increase efficiency in operations and thus improve the likelihood of achieving the business objectives of the company (response to A7I).

Responses relating to the assessment of the quality of the company's management accounting information (in terms of faithful representation, material relevant to decisions and timeliness) suggest that the company is still developing to the level where the management accounting information is sufficient in scope, is well integrated and is delivered timely in an aggregated manner (response to B4I). This is underpinned in the case described in sub-section 4.4.1.7 above. Therefore, in addition to the information on the profitability of products (financial), consideration of operational information on the inventory position and prospects vis-à-vis the associated product lead times reduces the likelihood of revenue losses through product stock-outs (B6III–IV).

4.4.2.2 Responses relating to the cost accounting system

Table 4.16: Analysis of the findings on the company's cost accounting system

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
A18(I), A(II), C8	Cost leadership strategic positioning is critical to the success of the company's business objectives.	
B9, C8, B10(II)	Cost analysis and estimations are applied to support cost leadership strategies.	
B9	The cost accounting system of the company is not as sophisticated as that of a full manufacturing concern.	

Table 4.16 shows a summary analysis of the interview responses relating to the company's cost accounting system. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements (themes) relating to the company's cost accounting system were identified only in the responses to the interview questions listed in the first column of Table 4.16 above. The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

Cost leadership is a critical strategic position required for success in the type of business in which the company is involved. Therefore, to support decisions relating to this critical strategy, there is a need for timely estimation of the cost of each product, other overheads and perhaps specific operations or segments. The costing function is applied for cost control, profitability analysis and inventory valuation. Thus, the framework should provide a reasonable base for each cost estimate to make it reliable for the relevant analysis. Nevertheless, the cost accounting system of the case company is expected to be less sophisticated than that of a fully manufacturing concern since its production activities are sub-contracted to overseas partners.

[P]rice advantage is a critical success factor in this business. Except for the suppliers' invoice values converted into the local currency, other components of our product costs are assigned by estimates … (Response to C8)

As it is here, what we only do is, we determine the cost [suppliers' invoices as converted] and then add certain elements of expenses to it … (Response to B9)

We do [analysis of overhead and use of the analysis] … We have ... It also helps in decision-making so that if you are overshooting on this one, you find a way of coming down. If you need to pay attention on certain things, it'll show you how to do it … (Response to B10II)

4.4.2.3 Responses relating to budgeting and responsibility centre reporting

Table 4.17: Analysis of the findings regarding budgeting and reporting by responsibility centre

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
A11, B11,	Not yet developed to support feedback and feed-forward control functions	

B12, C7		
	Could provide the framework for risk identification and assessment	
	Could be a mechanism for risk exposure control	
	Mechanism for the identification of opportunities for better cost management	

Table 4.17 presents a summary analysis of the interview responses relating to the company's budgeting and responsibility centre reporting. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements (themes) relating to the company's budgeting system were only identified in the responses to the interview questions listed in the first column of Table 4.17 above. The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

The company introduced a budgeting system as part of its organisational reforms (response to A11I). Although the system is yet to be developed to the level where feedback and feed-forward control is enabled, the responses suggest that the following functions could be associated with the company's 'operational' budgeting system. An operational budgeting system could provide the framework or the basis for the identification and consideration of risks associated with the objectives of the company. The budgeting system in this regard will involve the definition of the future action plans, the assessment of their associated risk implications, and the implementation of a risk exposure control mechanism through adjustments or changes of the budget estimates or variables.

> *Yes, it is relevant. It's relevant here [the feedback and the feed-forward aspects of the budgeting system], but like I said before, it has not been operational ... The comparison, the control aspect of it has not been operational.* (Response to B12)

> *We are still working on our budgeting system. I strongly agree; we need to develop it as soon as possible to the level where it will fully serve us in the managerial aspects you just described.* (Response to C7)

> *But for here, we have a budgeting system in place, but the comparison -- budgetary control is not just there.* (Response to B11)

The responses show that budgeting and responsibility centre reporting could be applied by the company to provide lead and lag measures. These measures explain or define the actions that are required to achieve more efficient cost applications, ultimately improving the chances of achieving the target financial and operating results (mitigating business risk).

> *It will help us to … reduce the cost of operation … The budgeting is important in the system. It will help us checkmate some of these things—you know, spending money on an item that [is] supposed to be written off and probably replaced with another one …* (response to A11II).

> *It also helps us to keep a record of whatever the company is spending for… [budgeting and responsibility centre reporting] At the end of the day, there are areas the company needs to change or make adjustments … so that the expenses that will be running through there will not be much. It will be*

controlled. Do you understand me? They can put a stop to a particular operation that is incurring much expense … (Response to A12II)

Table 4.18: Analysis of the findings regarding the non-financial performance measures

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
A, B13, D4	The balanced scorecard system is not applied, but there is a need to develop it.	
C4, C5, D2, D4	A balanced scorecard system that is developed and aligns with the company's strategy will likely support risk identification and treatment.	
C4, D4	Aligned customer satisfaction measures could indicate customer patronage and profitability prospects.	
C5	Enhancing the ability of management to monitor the risks confronting the system or process failures could be associated with properly aligned internal business process measures.	
A15, B15	A staff appraisal system and aligned staff trainings do exist.	
A15, C5, D2	Alignment of the staff capabilities, empowerments and motivation with the company's strategy is necessary for successful strategy implementation and accomplishment of the company's business objectives.	

Table 4.18 shows a summary analysis of the interview responses relating to the company's use of non-financial performance measures. The interview question reference (first column) is according to the description in Table 4.1. Excerpts or statements (themes) relating to the application of the non-financial measures of the BSC were only identified in the responses to the interview questions listed in the first column of Table 4.18 above. As often disclosed in the foregoing analyses, the interview process and questions were not strictly scripted. This allowed some degree of flexibility that enabled the researcher to refine and prioritise certain

questions in response to time constraints (see Section 3.3.3). Thus, themes or statements relating to the application of the non-financial measures of the BSC were only identifiable in the responses to the interview questions listed in the first column of Table 4.18 above.

The second column (related responses) shows the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) from the listed interview responses are reported in sections 4.4.2.4 and 4.4.2.5.

4.4.2.4 Responses relating to the performance measurement systems: Customer satisfaction measures

The relevance of the calculation and the typical performance measures relating to customer satisfaction and profitability as lead measures in assessing the prospect or the likelihood of possible changes in customer patronage and profitability were considered. Responses show that the company has no formal system of rating the level of customer satisfaction and assessing the associated measures. The responses thus underpinned the need to develop such a system.

> *I don't think we have such thing in the system ...* (Response to A13)

> *We don't have… unfortunately, we don't. The only way we engage them is just by mere calls, like I do from time to time. I call customers and find out how they view [and] how they also feel about the products they buy. Sometimes when they come and patronise and go, I send them a text message. But it's not a consistent thing.*

The researcher queried if customer feedback was being fed into a report.

No[t] at all. I just do it personal. It's not a formal thing anyhow … But the way you are going, I think we need it. I think we need it because it will create some sense in the mind of the customers. I think we need it. (Response to B13)

"Looking at these items you mentioned here … I think we have to find a way to implement them. It will really help us here. At least it can give us early signals of the pattern or direction of our sales and also the thinking of our customers. We just have to ensure that the chances of reporting errors are minimal. (Response to D4)

*Although sufficient data may not be readily available for the calculation of some of these measures [e.g. percentage market share; see Table 2.2], they are largely relevant in my opinion in forecasting and monitoring customer patronage. They can also serve as a guide for necessary actions to mitigate possible slide in customers' patronage and profitability. Furthermore, it [*sic*] can provide the motivation for the identification and continuous review of the customer and market segments in which the company will compete. We are working very hard to ensure that our costs and accounting information is up to date and generated as at when due. That will provide the necessary backup for the calculation and consideration of these very important measures.* (Response to C4)

4.4.2.5 Responses relating to the performance measurement systems: Internal business improvement and employee learning and growth measures

Although there are no formal PMSs in the company that could be substantially associated with the internal business improvements, the need to develop such systems is well reflected in the responses. The related measures considered during the interview included percentage of sales from new products or new product models; new product/models introductions versus competitors; percentage of sales from new market or new customer segments; development cycle time (time to market); unit cost trends; and percentage of defective output.

Although the related response acknowledged the need for developing a formal reporting system for these measures, the participant stated that some of the measures are issues of managerial judgement while some may not in fact be applicable due to the nature of the company's production arrangement.

> *Yes, from time to time, we do launch new products or new product models so to say. We also know when our competitors do the same. But we don't like keep records or make calculations based on new versus existing products or models ... Our overseas partners handle our production process and incidence of defective output is minimal and insignificant. If I get you right, I think what you are driving at is monitoring the capability of the company versus that of our competitors in product innovations and performance and also production cost advantage. We use our own judgement to assess that, but it is a good thing, like you said, if it comes in form of a formal report*. (Response to D3II)

In respect of measures relating to the capabilities or the effectiveness of the information system, the following were considered during the interviews: percentage of days in a period that the IT system recorded a breakdown or had severe issues; percentage of transactions recorded in real time or on a same-day basis; number of customer statements manually prepared or manually adjusted in a period; and percentage of inventory items with variances arising from human or system errors. Enhancing the ability of management to monitor the risk of system or process failures was the key potential benefit identified in having such a PMS.

> *Yeah, we don't have. We don't have any …* (Response to B14I)

> *There's no system per se ... All what we do is, the moment there's a breakdown in any system, we are being alerted; we follow suit and fix it.* (Response to A14I)

> *I know we make every effort to fix things when they go wrong, but here we don't have these records the way you describe them … Like you rightly said, these measures, if they are implemented, will help us monitor the effectiveness of our information system and the capacity required to operate the system. For example, if we have the record on the first item—percentage of days in a period the information system recorded a breakdown or had severe issues—say on a monthly or quarterly basis, we'll be able to monitor the improvement or otherwise of our information system …* (Response to D3I)

Moreover, besides the normal managerial supervision of employees' activities, alignment of their capabilities, empowerments and motivation with the company's strategy is necessary for successful strategy implementation and the accomplishment of the company's business objectives. The responses show that the company already has a staff appraisal system in place:

> *Yes, we have. It was introduced recently … staff evaluation … system that monitors the performance or the improvement of staff … It is a continuous process that the company …* (Response to A15)

Yes, we do [staff appraisal]. The personnel department handles it. From time to time, they [the staff] go for training. (Response to B15I)

The staff themselves understand the basis of the appraisal. (Response to B15II)

Some responses (e.g. response to A15) highlighted how the company achieved more cost efficiency through the training of members of staff to handle certain maintenance activities that were previously subcontracted to external parties.

The relevance of the following performance measures (see Table 2.2) in aligning the activities of the employees with the company's strategy was considered during the interviews:

- Employee satisfaction survey ratings
- Annual percentage of key staff leaving
- Sales revenue per employee
- Number of suggested improvements per employee
- Number of suggestions implemented per employee
- Percentage of employees with personal goals aligned with the company's strategy
- Percentage of employees who achieve personal goals

Measures relating to information system capabilities were mentioned previously in this section. Related responses point to the need to develop the PMS in order to help management in projecting employee capabilities and motivation vis-à-vis the set objectives of the company.

Although we already have our own staff appraisal system handled by the human resources department, I think we can consider incorporating some of these things you mentioned. For—for employee satisfaction ratings, I think staff anonymity might be required to get their actual feelings. But with these things you explained, I think we need it. The measures will help the management gauge the motivation and effectiveness of the workers towards achieving the objectives of the company. It will also enable the management to act in the right direction … (Response to D2)

The prospect of developing PMSs that are associated with the internal business improvements, employee learning and growth perspectives and the expected benefits is captured in the following response:

I strongly agree that these measures could be very useful in aligning the actions and the goals of our employees with the strategic direction of the company. I think it can also help us in measuring and monitoring the efficiency of our system of operation, supporting the identification of areas where actions are required to improve on our operating processes or mitigate future system failures and the possible impact. The challenge here might be defining the departments or units that will be responsible for generating or coordinating the relevant reports and the commitment in terms of time and resources required to produce such reports. Nevertheless, some items look good for Human Resources, some appear to fall under Marketing and Sales, while some can actually be aligned with the stores, accounts and internal audit functions. I think we need to look at these things closely and find a way of implementing them. (Response to C5)

4.4.2.6 Responses relating to financial measures and financial and other cost analyses

Table 4.19: Analysis of the findings regarding the use of financial and other cost analyses

Interview question ref. (according to Table 4.1)	**Related responses**	**Notes/ remarks**
A16, D5	Financial measures relating to profitability are associated with the year-end comprehensive financial reports.	
D5	Weekly and monthly sales reports and expense analysis do apply.	
C6	A regular performance report is necessary in assessing the likelihood of achieving the projected performance levels.	
D5	Generating the required reports as often as necessary could help define mitigating actions.	
A19	Cost and management accounting function is applied during product design and the developmental stage to mitigate unnecessary business exposures.	
C9	Cost-volume-profit analysis could be applied to measure and monitor business risk exposures but only with the understanding and proper analysis of the company's cost structure.	

Table 4.19 presents a summary analysis of the interview responses relating to the company's use of financial and other cost analyses. The interview question reference (first column) is according to the description in Table 4.1. Related excerpts or statements (themes) associated with the company's use of financial and other cost analyses were only identified in the responses to the interview questions listed in the first column of Table 4.19 above. The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and

paraphrased excerpts/statements) from the listed interview responses are reported in the following paragraphs.

The management report or the comprehensive financial reports provide the information for performance measurements related to profitability (response to A16). Besides assessing the results of past activities, regular consideration of these important measures could provide management with the highlights of the company's business risk exposures and the basis for innovative actions.

> *Comprehensive financial reports usually come at the year end … But we do have weekly and monthly reports—although not comprehensive—but it covers the sales in relation to branches, segments and also sales by products. Estimated product or total costs are applied to assess profitability. Comprehensive reports, like I said, comes [*sic*] at the end of our accounting period, 31 December. I think it is a good thing to monitor the profitability of our operation, generating the required reports as often as possible. It will help us in repositioning our activities where necessary …* (Response to D5)

> *Regular report[ing] is necessary in assessing the likelihood of achieving the projected performance level for each branch, market segment or the company as a whole. It can also help us to monitor the trend in revenue and the associated overhead over the period. Therefore, monthly and quarterly reports will serve better than waiting for year-end reports. However, we are still facing a great deal of challenge [accounting software and human capacity issues] in cost and accounting information generation.* (Response to C6)

Some of the responses relate to the company's product design and development stages (response to A19). Although this is primarily the work of the IT designers and the marketing personnel, the financial manager and the cost accountant (managerial accounting function) are involved in the financial aspect of the product design and development. The related function includes the assessment of the product profitability prospect and the associated financing of the market supply.

In relation to the application of CVP analysis in assessing the prospects or the likelihood of the company realising its set profit targets, the related response pointed to the multiplicity of products and the complex cost structures as factors that will make application of the tool very difficult (response to C9). Therefore, subject to the understanding and proper analysis of the company's cost structure, the multi-product method of the analysis may be applied to estimate the level of sales required to break even in the period or required to achieve the target profit. The analysis can also form the basis for the sensitivity analysis of adjustments or changes in the related cost estimates or variables. Thus, it can assist the management in assessing and monitoring the company's business risk exposures.

4.4.2.7 Responses relating to the application of contemporary techniques/practices

Table 4.20: Analysis of the findings regarding the use of contemporary techniques

Interview ref. (according to Table 4.1)	Related responses	Notes/ remarks
A17, B17, C3(I)	The company considers the activities of the Dangote Group as its benchmark for continuous improvements.	
A18(II), B18(I), C3(II)	The company applies the target-costing technique to improve the likelihood of the success of its products.	
B18(II), C3(I)	Value analysis/value engineering and functional analysis are usually applied to achieve the target cost.	
A20, B19, C3(III)	Although the company has outgrown the practices relating to reverse engineering or tear down analysis, identified opportunities could still be harnessed.	

Table 4.20 shows a summary analysis of the interview responses relating to the company's application of certain contemporary management accounting techniques. The interview question reference (first column) is according to the description in Table 4.1. Related excerpts or statements (themes) associated with the company's use of certain contemporary management accounting techniques were only identified in the responses to the interview questions listed in the first column of Table 4.20 above. The second column (related responses) presents the summary of the findings from the stated interview responses. The details of the findings (provided as direct and paraphrased excerpts/statements) are reported in the following paragraphs.

The application of contemporary costing and management accounting practices such as target costing, benchmarking, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering has benefitted the company in the area of innovation drive and mitigation of the risk of product failure.

The company presently regards the corporate structure, systems, coverage, activities and products of the Dangote Group (a publicly quoted company with accessible annual reports) as its benchmark for the continued improvement in its processes, systems and activities. The case company considers the Dangote Group a better performing company in terms of size, products, coverage, systems, etc. and thus will make every effort to improve its activities to be in line with those of the Dangote Group (response to C3I).

> *Lately, we started to see if we can … we are dreaming to be like Dangote [laughs] Group of companies. That is the new slogan now that FIL [Fedan Investment Limited] is gearing to becoming as big as Dangote ... That is the vision. That is our plan. And we tend to ensure that those things that made them big—we are planning to see if we can put those systems in place to be like Dangote Group of companies ... There are things they are doing to have expanded … to have gotten to that level, which we feel we could do … and even cross that level.* (Response to A17)

> *Are you saying if there's any organisation we're looking up to? [Yes—Interviewer]. We are looking up to Dangote [laughter]. We are looking up to Dangote—yes—its activities, his product line and his coverage. That's what we are looking up to.* (Response to B17)

The company's business is highly competitive. In addition, it is a fashion business with a high risk of product obsolescence (response to C3II). Therefore, to ensure the sale of its products within a reasonable period, the company engages in market study (nature of demand, competitors' products and their prices) and predetermines its costs and prices while developing the products or making a production arrangement with the overseas partners. Techniques such as value engineering and functional analysis are usually applied to achieve the target production cost.

> *Yes, we do it [value analysis or value engineering and functional analysis].* (Response to B18II)

Value analysis/value engineering and functional analysis involve breaking down a product to determine what can be reduced or added to achieve a particular cost.

> *Of course, we have it. We have them [models produced for sale at low prices]. We have so many of them … for low income … Basically, the idea is for them to … for the goods to get to every low-income earner, no matter how, no matter their number …* (Response to A18II)

> *We do that … Yes, we do that. Because of the competitive nature of the business we are in. Most often, we try to say, 'Okay this' … in this charger, we are selling N700; we need a charger we can sell N400 so that a class of people can buy that of N700 and other class of people can buy that of N400. So what we do to achieve that of N400—we discuss with our suppliers and they produce for us …* (Response to B18I)

In respect of ‘reverse engineering or tear down analysis’, related responses show that the company has outgrown such practices. Rather, the company’s competitors trail its products. That, however, does not foreclose the possibility of the company harnessing such an opportunity (responses to A20 and B19).

> *What you described is common in this business. Our competitors do copy our models and most times, they fail in the quality adjustments [quality to price advantage]. Sometimes, they succeed in gaining price advantage, which affects us somehow, but the relative high quality of our products remains our strong advantage. Although we have overgrown this practice, good product designs can still attract our response*. (Response to C3III)

4.5 CONCLUSION

This chapter presents the analyses and the interpretation of the data obtained through the research questionnaire and the oral interviews in addition to the systems and policies that are in place as checked directly by the researcher. In terms of likelihood of risk occurrence and analysed financial impact, the analysis indicates that the risk of product failure due to obsolescence and competitive pressure represents the most important risk for the company. Other risks include risk of revenue losses due to product stock-out, product differentiation failures, failures in expectations of branch revenue growth, failures in accounting and internal control procedures, and exposure to credit losses. Practices and procedures exist that can pass as risk mitigation measures. However, the company does not have a formal risk management framework, especially in terms of ERM. Moreover, the analysis indicates that the management accounting practices of the company are still below the required level of sophistication to enhance its risk management process fully.

Discussions of the research findings and conclusions drawn from the completed analyses and interpretation of the data are presented in the following chapter. Recommendations made in line with the research findings and a summary of the entire study are also provided in Chapter 5. In addition, recommendations for further studies and concluding remarks are offered in the final chapter.

CHAPTER 5

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The detailed analysis and interpretation of the primary data collected for this study (systems in place, questionnaire and interview responses) were presented in the previous chapter. This final chapter covers the discussion of the research findings (empirical results) in association with the related literature. The discussion enabled the researcher to arrive at well-derived conclusions and to make valid recommendations based on the research findings. The discussion is divided into three parts in relation to the research questions. Section 5.2.1 discusses the findings regarding the significant risks associated with the operation of the company. Section 5.2.2 highlights the existing risk mitigation functions and the risk management framework that is required to manage the significant risks inherent in the company's operation sufficiently. Section 5.2.3 discusses the applicable management accounting techniques and practices and how they function or could function in enhancing the applicable risk management framework. Thereafter, conclusions are drawn and recommendations are offered based on the discussions. The highlights of the entire study, recommendations for further studies and the closing remarks are presented as the closing sections.

5.2 DISCUSSION OF THE RESEARCH FINDINGS

5.2.1 Research findings on the significant risks inherent in the operation of the company

5.2.1.1 An overview of significant risks inherent in the operation of the company

Table 5.1 below presents a summary of the research findings relating to the key risks inherent in the operation of the case company. The table includes references to the literature review and data analysis chapters and forms the basis of the discussion regarding the findings of this research (see sections 5.2.1.2 to 5.2.1.8).

Table 5.1: Summary of assessed risks according to research findings

S/N	*CH.4 REF.*	*CH.2 REF. LIT. REV.*	*RISK EVENTS DESCRIPTIONS*	*POSSIBLE CLASSIFICATIONS*	*REMARKS*
1	4.2.1, 4.2.2, 4.3.1, 4.3.2, 4.4.1.1, 4.4.1.7, 4.4.2.7, Table 4.3	2.2.1.1, 2.2.1.2, 2.2.1.3, 2.3.1	Product failure due to obsolescence and competitive pressures (high likelihood and high financial impact)	Business risk	Significant
2	1.1, 4.2.2, 4.4.1.1		Product failure due to manufacturing defects (subcontracted production activity—occurrence and financial impact very unlikely)	Operational risk	Not significant
3	4.4.1.7	2.2.1.2, 2.3.1	Revenue losses due to product stock-out (high likelihood and high financial impact)	Operational risk	Significant
4	1.1, 4.2.1, 4.4.1.4	1.1, 2.2.1.1, 2.2.1.2, 2.2.2.3	Product differentiation failures and failures in expectations of branch revenue growth	Strategy risk Business risk Operational risk	Significant
5	4.4.1.2, 4.2.2	1.1, 2.2.1.2	Failures in accounting and internal control procedures	Operational risk	Significant
6	4.4.1.3	2.2.1.2	Exposure to credit losses	Operational risk Strategy risk	
7	4.4.1.5		Exposures to changes in interest rate and foreign exchange rates	Other	Not significant
8	4.4.1.6		Exposure to increase in the cost of operation due to scarcity of essential products or services	Other	Not significant

5.2.1.2 Product failure: Obsolescence and competitive pressures

The analyses of the questionnaire (Section 4.2.2) and interview responses (Section 4.4.1.1) indicate that the risk of product failure due to obsolescence and competitive pressure qualifies as the most significant risk associated with the business of the company in terms of likelihood and financial impact. This risk could be classified as ‘business risk’, the likelihood of the company’s financial and operating results falling below projections or expectations (Section 2.2.1.2). For a company that is fully engaged in merchandising branded products and operates in a very competitive environment, this particular risk is considered to be naturally inherent in its business activities (sections 2.2.1.1 and 4.2.2). In other words, the risk is associated with the company’s business operation and, therefore, cannot be eliminated while the business continues under the same conditions (Section 4.2.1; Table 4.3). Rather, conscious effort is required to minimise the likelihood of the risk eventuating or to minimise the financial impact if the risk event does occur (sections 2.2.1.3 and 2.3.1).

In terms of likelihood and impact, the company has recently recorded significant losses in financial value as a result of obsolescence of its products. The risk of obsolescence is high because of frequent change in fashion and customers’ preferences (Section 4.4.1.7). The competitive nature of the company’s business is another key risk-factor. This is explained in the business vulnerability to rival strategies of competitors. The rival strategies include the proliferation of the market with models of products similar in appearance with the company’s performing products. Thus, the actions of the competitors potentially limit the ability of the company to achieve or to sustain the expected revenue level and could impair successful execution of its differentiation strategy (sections 2.2.1.1 and 4.2.1). The company must, therefore, seek to understand the key internal and external variables that determine the success of its products and consider the same in its planning and control actions (Section 2.3.1).

Therefore, the company's differentiation strategy (Section 4.2.1) should include adequate publicity that is targeted at enhancing customer awareness and orientation regarding the company's brand features/specifics, especially in terms of quality and packaging. Since it is the customers who ultimately decide the success of a strategy, it makes sense to consider them (prior assessment of their preferences and orientation regarding brand features) if the company is to reduce their exposure to this business risk. Moreover, the knowledge obtained from prior assessment of customers' preferences could be associated with the information from external sources (particularly about the company's competitors) to strengthen the company's ability to implement cost management measures (contemporary management accounting techniques) such as target costing, value analysis/value engineering and functional analysis (Section 4.4.2.7). These are measures that could diminish the company's exposure to product failures due to obsolescence and competitive pressures (see Section 5.2.3.3).

5.2.1.3 Product failure: Defective production

In relation to product failure in the market due to production defects, interview responses indicate that possible defects in the production process do not constitute a key risk factor for the company (Section 4.4.1.1). The production process is a key factor in product quality and performance but the company currently lacks the capacity to manufacture its own products. Thus, the company develops and designs its models for production by the overseas partners. The production partners have the responsibility to produce products that are free from material defects and are according to the company's design, specifications and orders (Section 4.4.1). The responsibility for defective production, therefore, lies with the overseas producer partners. Accordingly, the company has not recently witnessed significant failures on the part of the producer partners (Section 4.4.1.1). However, the company maintains a quality control and technical section that is responsible for quality checks, adjustments in product models and corrections of possible product defects (Section 4.2.2). This is viable considering the costs and the time associated with effecting the return of products to producer partners overseas and reimporting the same items. Nevertheless, offset against the production partners is applicable where the production defects arise from a manufacturing process that is not according to the company's design and specifications. Thus, in relation to the activities of the case company, the risk of product failure due to defective production is adjudged not significant in terms of likelihood and financial impact (Section 4.4.1.1).

Although the company's exposure to 'defective production' does not qualify as a significant risk in terms of likelihood, management of the company should always be conscious of the possible financial impact (business disruption and loss of revenue) and loss of goodwill that are associated with occurrence of this risk event. The awareness of this risk will inform the diligence and dexterity required in negotiation and re-negotiation of production arrangements with new and existing overseas manufacturing firms. The awareness of this risk will also inform the improvement in the operation of the technical and quality assurance unit of the company in terms of internal business process and employee learning and growth (sections 4.2.2 and 5.2.3.5).

5.2.1.4 Revenue losses due to product stock-out

The analyses of the interview responses indicate that the 'risk of revenue losses due to unavailability of products' is one of the key risks inherent in the company's type of business in terms of likelihood and financial impact (Section 4.4.1.7). This risk can be categorised as an 'operational risk'—a risk associated with the likelihood of failures in people's actions, systems or processes and including external events that adversely affect the operation of an organisation (Section 2.2.1.2). The responses further show that this risk involves both internal and external factors as follows (Section 4.4.1.7):

- Internal: Operating limitations (inefficient inventory planning)
- External: Difficulties and complexities associated with clearing of goods at the port of entry

Moreover, conditions associated with the production arrangements (minimum period to run production orders or minimum level of output required per production order) make it difficult to eliminate the 'risk of revenue losses due to unavailability of products' without increasing the risk of overtrading and exposure to product obsolescence. In other words, this is the risk of product failure due to obsolescence and competitive pressures as discussed in Section 5.2.1.2 above. Thus, establishing an inventory model or a formal system for inventory replenishments is unlikely to be applicable in the context of the company's business operation (Section 4.4.1.7). However, the company carries out periodic analyses of the performance of its products. These analyses, in association with other qualitative factors, guide the management in placing production orders. The analyses indicate the performance of each product or class of products and provide clues for the projection of future customer demand.

Nevertheless, the findings of the current study indicate that the company is still susceptible to losing significant revenue in sales due to extended product stock-out. As stated before, extended product stock-out could result from an external factor (difficulties and complexities associated with the clearing of goods at the port of entry) or from internal operating limitations or inefficiencies. The internal business limitations or inefficiencies reflected more in an identified case where the company lost a substantial amount of revenue due to extended stock-out of a performing product. The production and supply of the product was inadvertently suspended when the company concentrated on another high performing product for which production and supplies were not mutually exclusive to the abandoned product. It was evident (as confirmed in the findings) that sufficient managerial accounting reporting was not available or was not considered in the production requisitions for that particular period.

It follows that the losses could have been mitigated (avoided or reduced) with the provision and consideration of relevant and sufficient managerial accounting information, especially in relation to production and delivery cycles, forecast and actual periodic sales and product balances in both quantities and values (see Section 5.2.3.2). To be more specific, the losses would have been clear to management if there had been a functional sales budget that was reviewed often against actual sales (quantities and values) in association with product balances in quantities and values (product performance analysis). This case underscores the importance of a functional budgeting system and a regular products performance analysis. Thus, the company should endeavour to make its budgeting system operational with both feedback and feed-forward functions clearly activated (see Section 5.2.3.4). It is indicated in the literature that the value creation and the value preservation functions of managerial accounting entail the use of accounting methods, systems and techniques. Examples are financial accounting, cost accounting, and budgeting as risk management mechanisms (upside risk and downside risk management measures) to provide managerial information that enhances the ability of an organisation to achieve its objectives (Section 2.3.1).

5.2.1.5 Product differentiation failures and failures in expectations of branch revenue growth

The research findings indicate that 'product differentiation' and 'branch operations' are associated with the company's strategy, investing in serving new customer and market segments (Section 4.4.1.4). The following are identified in the research findings as risks inherent in this strategy leaning:

- Product differentiation failure is an associated risk
- Revenue growth failure: Branch operations is an associated risk
- Increased operational risk is an associated risk

The 'likelihood of product differentiation failure' is a risk associated with the company's strategy leaning, investing in serving new customer/market segments. This is described in the literature as a strategy risk (Section 2.2.1.2). The company's strategic position leans towards differentiating its products (brands) from those of its competitors by means of higher quality and consideration of the price sensitivity of end-users (Section 4.2.1). The company often invests in producing high quality items for identified customer segments or classes of customers that are willing to pay for the quality. The associated likelihood of failure in revenue expectations qualifies as a 'strategy risk'. In relation to the operation of the company, this risk is significant in terms of likelihood and financial consequences. However, it should be noted that organisations voluntarily take on and manage this risk in order to generate superior returns (Section 2.2.1.2).

This risk could also be described in terms of 'opportunity-based risks'. Opportunity-based risks are inherent in both taking advantage of an opportunity and not taking advantage of an opportunity at all (Section 2.2.1.2), which clearly reflects the risk management definition adopted for this study. Risks (upside risks) can represent business opportunities that an organisation needs to identify and explore to improve its chances of achieving its business objectives (Section 2.2.1.1).

In terms of likelihood and financial impact, the research findings indicate that the price-sensitivity of the end users, which may be very difficult to assess properly in advance, could lead to the failure in the market performance of high quality items launched for identified customer segments or classes of customers (Section 4.4.1.4). This can also result from poor assessment of the prospective demand or the size of the prospective customer base. As discussed in section 5.2.1.2, the likelihood of failure of these high-quality products in the market could be primarily categorised as a business risk (product failure due to obsolescence and competitive pressures) and secondarily as a strategy risk—higher risk assumed to achieve greater results. Recommended actions for exposure mitigations were provided in Section 5.2.1.2 above.

The closure of a non-performing branch operation after much financial commitments and the inability of a particular branch operation to generate enough revenue to justify associated expenses (as in Section 4.4.1.4) testifies to the company's high exposure to 'revenue growth failure of branch operations' and the attendant financial impact. Moreover, an increase in the size of the operation results in higher operational challenges that include higher internal control exposures (sections 1.1, 2.2.2.3 and 4.4.1). This is the 'operational risk' dimension of the risks associated with the company's strategy of adopting multiple branch operations.

5.2.1.6 Failures in accounting and internal control procedures

The research findings indicate that exposures to operational limitations qualify as significant risks associated with the operation of the company. The exposures in relation to accounting and internal control procedures include the following (Section 4.4.1.2):

- Internal control exposures (inventory and cash)
- Failures in accounting and other procedures
- Software failures and user capacity challenges

These inherent exposures in the accounting and internal control procedures could be classified as 'operational risks'—risks associated with the likelihood of failures in people’s actions, systems or processes, thus adversely affecting the operation of an organisation (section 2.2.1.2).

In terms of likelihood and financial impact, there is a high likelihood of errors in the company’s accounting process and other procedures, which could be associated with poor supervision, low capacity to follow-up supervisory initiatives and gaps in specific skills. Moreover, the type and nature of the company’s business operation (high inventory volume, multiple products, heavy traffic of transactions and multiple processes that require efficient co-ordination) make exposures to accounting and internal control procedures critical components of the company’s overall risk profile (sections 1.1, 4.4.1.2 and 4.2.2). The company’s effort towards minimising the likelihood of errors in accounting and other procedures is reflected in the area of investing in staff training and retraining. In addition, the company attaches great importance to its internal control system and its improvements (Section 4.4.1.2).

5.2.1.7 Exposure to credit losses

The researcher’s insight (from the direct check of the systems in place) and the research findings regarding the company’s exposure to credit losses are summarised as follows (Section 4.4.1.3):

- The company has sustained substantial losses on customer credit exposures due to the absence of effective credit policy and debt recovery techniques.
- There is a drastic reduction in exposure with the introduction of a credit policy and recovery techniques.

- Exposures can imply a voluntary strategy to compete favourably in the market.

The company's exposure to credit losses could be classified mainly as an 'operational risk'—risks associated with the likelihood of failures in people's actions, systems or processes and including external events that adversely affect the operation of an organisation (Section 2.2.1.2). Except for external dimensions of this risk (the financial impact of which the company should mitigate), operational risk exposures are directly influenced by internal operating limitations and inefficiencies. The internal dimension of operational risks, referred to in the literature as 'preventable risks'—risks arising from system processes and employees' and managers' actions—should be mitigated with an effective internal control system (Section 2.2.1.2).

Exposure to credit losses in relation to the operation of the company could be explained from the perspective of the voluntary strategy implemented to achieve/surpass a target level of sales revenue or to mitigate the adverse impact of competitors' actions (rival strategies). Exposure to credit is classified from this perspective as 'strategy risks'—risks associated with the chosen strategy of an organisation—and adopts the theory of 'higher risks for higher returns'. That is, organisations voluntarily take on and manage these risks in order to generate superior returns (Section 2.2.1.2).

5.2.1.8 Exposures not considered significant in relation to the company's operation

From the research findings (sections 4.4.1.5 and 4.4.1.6), the exposures that are considered to bear little or no potential impact on the activities of the company are as follows:

- Changes in interest and foreign exchange rates
- Scarcity of essential products or services that severely impairs the operation of the company

The exposures listed above are considered not significant for the following reasons:

- The company has cleared its facilities with the banks, and the impact of interest rate changes is predominantly absent.
- Although settlement of production partners is in foreign currency, the impact of rate fluctuations is not considered significant.
- High cost of maintenance expenses and other overhead costs are attributed to poor economic infrastructure.
- The cost of production is not affected by scarcity of essential products or services.
- Although scarcity of essential products or services may affect the workers and the local transportation cost of products, the overall potential impact on the company's operation is not considered significant.

The classification of these exposures as insignificant (Table 5.1) in relation to the company's business operation is not absolute. Rather, the classification reflects the current nature of the activities of the company and the existing operating circumstances. For example, the conclusions regarding these exposures will change in terms of the following:

- Accumulation of substantial non-fixed interest rate facilities
- Accumulation of substantial debts/payables denominated in foreign currencies
- Scarcity of essential services or items in the home countries of the overseas partner firms that significantly influences the operation of those firms.

5.2.2 Research findings relating to the company's risk management process

The research findings relating to the applicable risk management process in the company are summarised as follows (Section 4.4.1.8):

- The company does not have a formal risk management process, especially in relation to ERM.
- Practices exist that can be regarded as risk management functions.
- The company needs to develop a formal risk management process.

The company does not have a formal risk management process or systems, especially from the perspective of ERM. However, the company does have concepts, procedures, functions or equivalent practices that can be associated with the process of managing risk (Section 4.2.2).

In terms of risk identification and awareness, the research findings (Section 4.4.1.8) show that the risk of product failure is well acknowledged as the most important risk of the company, and the management is making every effort in their own way to mitigate this significant risk. Mitigating the risk of product failure is a key challenge associated with the business of the company. Literature records that organisations are becoming more aware of various internal and external variables that can contribute to their success or failure. Hence, there is an increasing effort to develop the ability to predict both the adverse and the favourable outcomes associated with risk events, to measure their potential impacts and to initiate mitigation and control measures in a proactive manner (Section 2.3.1).

The risk of product failure was well acknowledged as the most important risk of the company. Regarding this risk, the findings indicated that the company applies or has applied contemporary practices (cost management techniques) such as target costing, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering to diminish the risk of product failures (sections 2.3.3 and 4.4.2.7). The existing systems and processes include internal control measures implemented to mitigate the exposures relating to the company's assets, especially inventory and cash (Section 4.4.1.8).

Notwithstanding the existing or equivalent practices, the research findings imply the need for the company to develop a formal risk management system that is well co-ordinated, aligned with its operating structure and embedded in the decision-making process. Literature indicates that risk management is fast becoming a core function in the managerial process due to the increasing competition and complexities associated with the global business environment and the need for business survival and sustainability (Section 2.3.1). In relation to ERM, the literature reflects that business environment realities require a more integrated approach to risk management, an approach that aligns risk management with the business strategy, making risk management part of the normal business operation rather than managing risks at the individual activity levels or in an ad hoc manner. This approach to risk management, known as ERM, is a comprehensive process that is continuous, proactive and systematic in nature (Section 2.2.2.2). Enterprise risk management is a developing approach with no universally accepted standardised format for its implementation. The approach can be adapted and applied across different sizes of organisations (small, medium or large enterprises). Thus, the case company (as a medium-sized enterprise) should adopt and implement an ERM definition and framework that is suitable for its business type, scope and complexity (sections 2.2.2.2 and 2.2.2.3). Actions recommended in this regard are provided in Table 5.3, Item 9 and section 5.4.2.5 below.

5.2.3 Research findings regarding the applicable management techniques and practices and their potential to improve the company's risk management process

5.2.3.1 An overview of the applicable management techniques and practices

Table 5.2 below is a summary of the research findings relating to the applicable management techniques and practices and how they can contribute to improve the case company's risk management process. The table includes references to the literature review and the data analysis chapters and forms the basis for discussing the related research findings in sections 5.2.3.2 to 5.2.3.6 that follow.

Table 5.2: Summary of applicable management accounting techniques and practices according to the research findings

S/N	*CH.4 DATA ANALYSIS REF.*	*DESCRIPTION OF APPLICABLE MANAGEMENT ACCOUNTING TECHNIQUES/PRACTICES AND TARGET RISK/RISK MANAGEMENT PROCESS*	*CH. 2 LITERATURE REVIEW REF.*
1	4.4.1.7, 4.4.2.1, 4.4.2.3	In general terms, managerial accounting information is applied in the company's decision-making process. However, the nature and the size of the company's operation require a more sophisticated management accounting information system. The risk of revenue losses arising from extended product stock-outs could be mitigated through consideration of sufficient and more integrated management accounting information.	2.2.1, 2.3.1, 2.3.2, 2.3.3, 2.4.1, 2.4.2
2	1.1, 4.4.2.6	A cost and management accounting function is applied during product design and the developmental stage to mitigate unnecessary business exposures.	1.1, 2.3.3
3	1.1, 4.4.2.2	The company has production arrangements with overseas partner-firms and, therefore, does not need a more sophisticated cost accounting system to address manufacturing concerns. However, a cost accounting system that provides for cost analyses and estimations would be useful in enhancing the ability of the management to mitigate business risk and the risk of strategy failure (e.g. cost leadership strategy).	2.3.3
4	4.2.2, 4.4.2.7	Contemporary techniques/practices such as target costing, benchmarking, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering have proved to be useful in the company's mitigations of business and strategic risks (downside risks), and are also being applied as tools in exploring opportunities for better business results (upside risks).	1.1, 2.2.1.1, 2.3.3, Figure 2.2
	4.4.2.6	Cost-volume-profit analysis could be applied to measure and monitor	2.3.3

S/N	CH.4 DATA ANALYSIS REF.	DESCRIPTION OF APPLICABLE MANAGEMENT ACCOUNTING TECHNIQUES/PRACTICES AND TARGET RISK/RISK MANAGEMENT PROCESS	CH. 2 LITERATURE REVIEW REF.
5		business risk exposures, however, only with the understanding and proper analysis of the company's cost structure.	
6	4.4.2.3	Budgets could be applied as mechanisms for the identification of opportunities for better cost management. They could serve as a framework for risk identification and assessment. However, the company's budgeting system is not yet developed to support feedback and feed-forward control functions.	
7	4.4.2.4, 4.4.2.5	Developing and implementing a performance measurement system (the balanced scorecard) that aligns the non-financial measures (may be adapted) with the company's strategy leanings will facilitate risk identification and treatment.	2.3.3, Table 2.2
8	4.4.1.2, 4.4.2.6	Financial measures relating to profitability and cash flow are associated with the year-end comprehensive financial reports. However, generating financial performance reports as often as necessary could help define mitigating actions, that is, provide for assessing the likelihood of achieving the projected performance levels.	2.2.1.2, 2.2.1.3, 2.3.3

5.2.3.2 General managerial accounting information

Literature shows that the planning and control function of a MAS (consistent with the risk management definition adopted in this study) encompasses resource management, creation and preservation of value (sections 2.3.1 and 2.2.1). The value creation and the value preservation functions entail the use of accounting methods, systems and techniques as risk management mechanisms (upside-risk and downside risk management measures) to provide managerial information that enhances the ability of an organisation to achieve its objectives (sections 2.3.1, 2.4.1 and 2.4.2). In view of the above description of general managerial information and regarding the company's operation (sections 4.4.1.7 and 4.4.2.1), the research findings indicate the following:

- In general terms, managerial accounting information is applied in the company's decision-making process. However, the nature and the size of the company's operation require a more sophisticated management accounting information system.
- The risk of revenue losses arising from extended product stock-outs could be mitigated through consideration of sufficient and more integrated management accounting information.
- The company's management accounting information system includes management reports from consultants.

The findings relating to the company's reporting system regarding general managerial accounting show that internally generated reports (e.g. sales in quantity and in value) serve as lead measures that could guide subsequent management's actions (sections 2.3.3 and 4.4.2.1). However, the company's information system relating to managerial accounting is still below the level of sophistication that is required to support value creation and the value preservation functions fully (Section 2.3.1). Sophistication of the management accounting system refers to the operating capability of the system in generating timely, broad-based, integrated and aggregated information—the level of information required to implement an effective risk management system such as

ERM (Section 2.4.2). Thus, assessing the quality of the company's management accounting information (in terms of faithful representation, timeliness and information that is material and relevant to decisions) suggest that the company is still developing to the level where the management accounting information is sufficient in scope, is well integrated, is aggregated and is delivered in a timely manner (sections 2.3.3 and 4.4.2.1).

The findings regarding the general managerial accounting information are underpinned in the case discussed in section 4.4.1.7 above. Thus, the consideration of integrated information on the profitability of products (financial) and operational information on the inventory position and prospects vis-à-vis the associated product lead times will support production requisitions with minimal exposure to revenue losses through product stock-outs.

In relation to the level of involvement of external auditors or consultants in the management accounting reporting needs of the company, the findings indicate that their reports can influence improvements in the company's internal operating process, especially in relation to operational risk exposures. Some responses suggest that these external recommendations can also cover the managerial actions that are required to achieve more efficiency in operations, thus improving the likelihood of achieving the business objectives of the company. Literature shows that the decision-making process will be more effective with management accountants who also play key roles in internal control systems, risk management and the overall corporate governance. However, it is argued that a standardised decision-making process requiring significant documentations may lead to increased outsourcing of decisions. That is, the organisation relies more on the work of consultants than on the work of the management accountants in the firm (Section 2.3.2). Furthermore, it is the researcher's opinion (from the direct check of the existing system) that a major change in the composition of the company's executive management is a key factor that influences the level of involvement of external auditors or consultants in the management accounting reporting needs of the company. Consequently, the management's desire to achieve a higher level of formalisation in the structure and operation of the company required additional engagement of the external consultants (sections 2.3.2 and 4.4.2.3).

5.2.3.3 Cost accounting, strategic cost management and related cost analyses

Regarding the company's application of cost accounting, strategic cost management and related cost analyses, the research findings indicate the following:

- The company has production arrangements with overseas partner firms and, therefore, does not need a more sophisticated cost accounting system to address manufacturing concerns. However, a cost accounting system that provides for product and overhead cost analyses and estimations is useful in enhancing the ability of the management to mitigate business risk and the risk of strategy failure (e.g. cost leadership strategy) (Section 4.4.2.2).
- Target price range and cost analysis of quality attributes for proposed product models are often considered during product design and the developmental stage to mitigate business risk exposures (Section 4.4.2.6).

- Contemporary techniques/practices such as target costing, benchmarking, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering have proved to be useful in the company's mitigations of business and strategic risks (downside risks) and are also being applied as tools in exploring opportunities for better business results (upside risks) (Section 4.4.2.7).
- Cost-volume-profit analysis could be applied to measure and monitor business risk exposures but only with the understanding and proper analysis of the company's cost structure (Section 4.4.2.6).

The research findings underpin the application of cost and management accounting function (during product design and the developmental stage) to make reliable cost estimations and projections, thus minimising the company's business risk exposures (sections 2.3.3 and 4.4.2.6). In addition to collaboration with the overseas partners, these estimations and associated cost and revenue projections require the input of the following units of the company: quality control/technical, cost accounting and accounting/finance (Section 1.1). Literature shows that a costing system supports the relevant assessments that are required for varying the prices of products and services and could constitute a significant part of the broad-based business information system that is required to implement a broad-based and integrated risk management system effectively (Section 2.3.3).

Moreover, a costing system could be a critical success factor for strategy implementation, for example, standard costing and variance analysis associated with a cost leadership strategy or an ABC costing system associated with a product differentiation strategy to generate more accurate product cost measurements (Section 2.3.3). However, the case company, with the outsourcing of its manufacturing activities to overseas partners, does not have the incentive to operate a higher cost accounting system or possess the capacity as a medium-sized organisation to implement sophisticated costing techniques such as ABC systems (sections 1.1, 2.3.3 and 4.4.2.2). The costing function in the company (mainly analysis and evaluation of overheads and product costs according to supplier's invoices) is applied for cost control, profitability analysis and inventory valuation. Therefore, the costing framework should provide reasonable bases for the cost estimates to make them reliable for the relevant analyses (Section 4.4.2.2).

Furthermore, the findings show that contemporary techniques and practices such as target costing, benchmarking, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering (also described in the literature as 'strategic cost management' have been applied in the company as mechanisms for mitigating exposure to business and strategy risks. These techniques and practices are also being applied as tools in exploring opportunities for better business results (Section 4.4.2.7).

The application of these cost management techniques to improve the competitive ability of the company, especially in the area of customer retention, attraction of new customers, expansion of customer base and overall improvement in revenue, is consistent with the risk management definition adopted for this study. This definition includes taking advantage of identified opportunities to maximise value creation (sections 1.1, 2.3.3, 4.2.2 and 4.4.2.7). Moreover, these techniques and practices are considered relevant to the case company on the premise that the key risks associated with the company's business are likely to include product failures due to defects, obsolescence and competitive pressures (Section 2.2.1.1). Furthermore, by benchmarking its activities against that of the Dangote Group or any other larger and better performing companies, the company enhances its ability to identify opportunities for improvements in its performance. This is also consistent with the risk management definition (upside risk) adopted in this study (sections 2.2.1.1, 4.4.2.7 and Figure 2.2).

In relation to the application of CVP analysis in assessing the prospects or the likelihood of the company realising its set profit targets, the research findings and related literature point to the multiplicity of products and the complex cost structure as factors that will make application of the tool very difficult (sections 2.3.3 and 4.4.2.6). Literature records that CVP analysis can be adapted to a multi-product setting. The application is easier and is the same as with single products where all the fixed costs are clearly attributed to each product. However, where a shared fixed cost is involved (as in the case of the company), a sales mix (ratio of the combination of individual products) is determined and applied to define the standard batches with which the break-even point is measured. Therefore, subject to the understanding and proper analysis of the company's cost structure/behaviour, the multi-product method of the analysis may be applied to estimate the level of sales required to break-even in the period or required to achieve a target profit. The multi-product method can also form the basis for the sensitivity analysis of adjustments or changes in the related cost estimates or variables (sections 2.3.3 and 4.4.2.6). The CVP function expresses the relationship between sales value, sales volume (activity level), variable costs and fixed costs, and it is a useful planning tool in terms of predicting profits and the effect of changes in any of the function variables. Thus, it can assist management in assessing and monitoring the company's business risk exposures.

According to literature, the application of CVP analysis in the decision process has the potential to reduce the risk exposure of an organisation. Managerial accountants apply the analysis to plan future operations and to monitor the business performance by identifying the necessary activity levels or operational adjustments that are required to break even or to achieve the desired profit. Thus, the analyses facilitate the assessments of risks associated with the organisation's choice of service, product or product mix (Section 2.3.3). Cost-volume-profit analysis allows management to predict the changes to the target performance level should the specified activity level fluctuate. The analysis highlights the break-even point (the point at which total revenue equals total cost) and the margin of safety, the degree at which the revenue may fall and trigger a loss. Using the CVP function, the effect of changes on other variables (selling price, variable cost and fixed costs) can be estimated. Thus, the analysis provides for the assessment of the sensitivity (responsiveness) of projected financial results to the constituent variables (sales volume, selling price, variable cost and fixed costs). This then becomes a pointer to the company's exposure to business risk—the likelihood of achieving its target financial results. This knowledge could be applied for better management of the critical factors of performance.

5.2.3.4 Budgeting

In relation to budgeting as a relevant and applicable management accounting practice in the operation of the case company (section 4.4.2.3), the research findings indicate the following:

- The budgeting system was introduced in the company as part of its organisational reforms. However, the system is yet to be developed to the level where feedback and feed-forward control is enabled.
- An 'operational' budgeting system (developed to the level where feedback and feed-forward control is enabled) could serve the company as the framework or the basis for the identification and consideration of risks associated with the objectives of the company.
- Budgets as mechanisms for defining future action plans—action plans that have associated risk implications—could provide for risk exposure control through adjustments or changes of the budget estimates or variables.
- The budgeting system (with reporting according to responsibility centres) could be applied by the company to provide lead and lag measures, which explain or define the actions that are required to achieve more efficient cost applications, ultimately improving the chances of achieving the target financial and operating results (mitigating business risk).

Budgets define the organisation's future action plans, which have associated risk implications. Therefore, any changes made in the budget projections (variables or estimates) can either increase or reduce the organisation's exposure to particular types of risk. Besides the inclusion of risk identification and mitigation functions in the budgeting process, literature suggests the use of budgets as a mechanism for risk exposure control. Thus, there is universal acceptance of budgeting as a key instrument for planning and control functions (Section 2.3.3).

In relation to control systems, literature suggests that basic management accounting techniques such as basic budgeting systems, cash budgets and forecasts are essential elements in the development of control systems (Section 2.3.3). Risk management has developed and expanded in scope beyond issues of narrow concern by finance (calculation of value at risk, use of derivatives, etc.) or accountants (financial statement disclosure, etc.) to constitute a core function embedded in the management control process, an area considered to fall within the management accounting job role (sections 2.3.1 and 2.3.2). The prospect of a functional budgeting system is visible in the case company. This is evidenced in the existence of the position of a budget officer. However, management should endeavour to make the budgeting system operational with both feedback and feed-forward functions clearly activated. The essence of this is also reflected in Section 5.2.1.4 above.

The feedback and feed-forward control models reflect the risk management context as defined for this study (sections 2.2 and 2.4). Feedback control function involves the monitoring of outputs achieved against desired (projected) outputs and taking necessary corrective actions if deviations exist. The feed-forward control is a system where future outputs are predicted and compared with expected future outputs, and control actions are initiated to minimise differences where these expectations differ from what is desired. Thus, the objective of feed-forward is for control to be achieved before any deviations from the desired outputs actually occur. The budgeting/budgeting control process (see Section

2.3.3) follows the principles of ex-ante and ex-post functions of the MAS as depicted in Table 2.3. It follows that the risk management function (ex-ante and ex-post) as shown in Table 2.3 could be facilitated within the budgeting framework.

5.2.3.5 Performance measurement system: Non-financial measures

The research findings in respect of the non-financial measures of the BSC applied as a PMS of the company are summarised as follows (sections 4.4.2.4 and 4.4.2.5):

- There is no PMS in the company that sufficiently reflects the BSC system. However, a staff appraisal system and staff trainings exist that are aligned with the internal business operating capability prospects of the company.
- Developing and implementing a PMS (the BSC) that aligns the non-financial measures (may be adapted) with the company's strategy leanings will facilitate risk identification and treatment.
- Aligned customer satisfaction measures could provide the indications of customer patronage and profitability prospects.
- Enhancing the ability of management to monitor the risk of system or process failures could be associated with properly aligned internal business process measures.
- Alignment of the staff capabilities, empowerments and motivation with the company's strategy is necessary for successful strategy implementation and accomplishment of the company's business objectives.

Management accounting information, particularly in relation to performance management, provides for the assessment of an organisation's risks and the subsequent actions that are required to eliminate risks or minimise their possible impacts (Section 2.3.3). Thus, it can be stated from findings associated with related literature that the company needs to develop and implement a PMS (the BSC), with each performance dimension being well adapted and aligned with the company's strategy leanings. This will facilitate risk identification and treatment (sections 2.3.3, 4.4.2.4 and 4.4.2.5). Key performance indicators identifiable with each dimension of the BSC could be the basis for risk analysis where the BSC framework is implemented as a PMS. In other words, the risks (likelihood of failure) associated with each performance indicator are analysed and responsibilities (in terms of personnel or units) ascertained or assigned to provide for enterprise-wide mitigation actions (section 2.3.3).

The case company has continued to adopt (as its strategy leaning) a mix of product differentiation, cost leadership and focusing strategies. The success of this strategy could be enhanced with the implementation of a PMS adapted to the company's size and the nature of its operation (sections 2.3.3 and 4.2.1). Kaplan and Norton devised the BSC in 1992 to integrate financial and non-financial performance measures, enabling the identification of key measures linked to strategy (sections 2.3.3). The lag and lead measures of the BSC (adapted in relation to the case company's objectives and strategy leanings) could serve as risk assessment mechanisms, providing the means to assess the prospects of achieving the company's objectives (Table 2.2 and sections 2.3.3 and 4.2.1). The lag measures (according to Table 2.2) are outcome measures that are largely defined in terms of financial performance. The lead measures (according to Table

2.2) include the customer perspective, the internal business perspective, and the learning and growth perspective that could represent the drivers of potential financial performance (Table 2.2, Section 2.3.3). The principles associated with the lag and the lead measures can be explained, respectively, in terms of feedback and feed-forward control measures and are thus consistent with the risk management definition adopted in this study (sections 2.2.1.1 and 2.4.1).

In relation to customer satisfaction and profitability as lead measures in assessing the prospect or the likelihood of possible changes in customer patronage and profitability, the findings indicate the need for the company to develop such a system. The measures can serve as a guide for the necessary actions to mitigate possible slide in customers' patronage and profitability. Although sufficient data may not be readily available for the calculation of some of these measures (e.g. percentage market share according to Table 2.2) in a significant way, the measures can provide the motivation for the identification and continuous review of the customer and the market segments in which the company will compete (Section 4.4.2.4).

Although there are no formal PMSs in the company that could be substantially associated with the internal business improvements, the need to develop such systems is well reflected in the findings. The related measures considered during the interview included the following:

- Percentage of sales from new products or new product models
- Introduction of new product models versus competitors' new product models
- Percentage of sales from new market or new customer segments

- Development cycle time (time to the market)
- Unit cost trends
- Percentage of defective output

Although the related responses acknowledged the need for developing a formal reporting system for these measures, it was indicated that some of the measures are issues of managerial judgement while some may not in fact be applicable due to the nature of the company's production arrangement (Section 4.4.2.5). The BSC system offers the flexibility for management discretion and convenience in appraising the firm's generic and specific risks and thus, it can be adapted to the specific needs of the firm, industry, business operation cycle, manager and stakeholder (Section 2.3.3). In respect of measures relating to the capabilities or the effectiveness of the information system, the following were considered during the interviews:

- Percentage of days in a period that the IT system recorded a breakdown or had severe issues
- Percentage of transactions recorded in real time or on a same-day basis
- Number of customer statements manually prepared or manually adjusted in a period
- Percentage of inventory items with variances arising from human or system errors

Enhancing the ability of management to monitor the risk of system or process failures was the key potential benefit identified in having such a PMS (Section 4.4.2.5). Moreover, besides the normal managerial supervision of employees' activities, alignment of their capabilities, empowerments and motivation with the company's strategy is necessary for successful strategy implementation and accomplishment of the company's business objectives. The responses show that the company already has a staff appraisal system and staff trainings in place that are aligned with the internal business capability prospect and that incorporate some of the related items presented in Table 2.2. Nevertheless, the related findings could indicate the need for the company to develop and adapt the BSC system according to its strategy since there is no PMS in the company that sufficiently incorporates the non-financial performance perspectives that could provide leads for future financial performance. It is indicated in the literature that the BSC is probably the most widely used approach to mitigate the adverse consequences of relying or focusing excessively on short-term financial performance measures (Section 2.3.3). Moreover, the flexibility in its application makes it suitable for organisations of varying sizes, including medium-sized entities. Furthermore, the findings reflect that the adapted measures (Table 2.2) are applicable and could be very useful to the company in the context of this study.

Literature recommends that managers should go beyond the popular recognition of the impact of measures on performance and implement performance measurement as an essential component of their strategy. In reality, effective performance measurement must constitute an integral part of the management process. Moreover, beyond a performance measurement process, the BSC is a management system that can engender successful improvements in product quality, processes, customer satisfaction and market development. These areas are critical to the success of the company. Thus, the BSC integrates the measures relating to customers, internal processes, innovation and improvement as complementary measures to the traditional financial indicators (Section 2.3.3).

The critical aspect of the BSC development process is linking measurements to strategy. This requires the following three items (Section 2.3.3):

1) Determination of how success in the company's vision and strategy affects or changes aspects of the measurement system: the customers' perception of the company, the internal business process, innovation and growth, and shareholder/ownership worth
2) Identification of the critical success factors in each of the four BSC dimensions
3) Ascertainment of the key measurements as indicators of the company's success or otherwise in addressing the critical success factors according to the set objectives

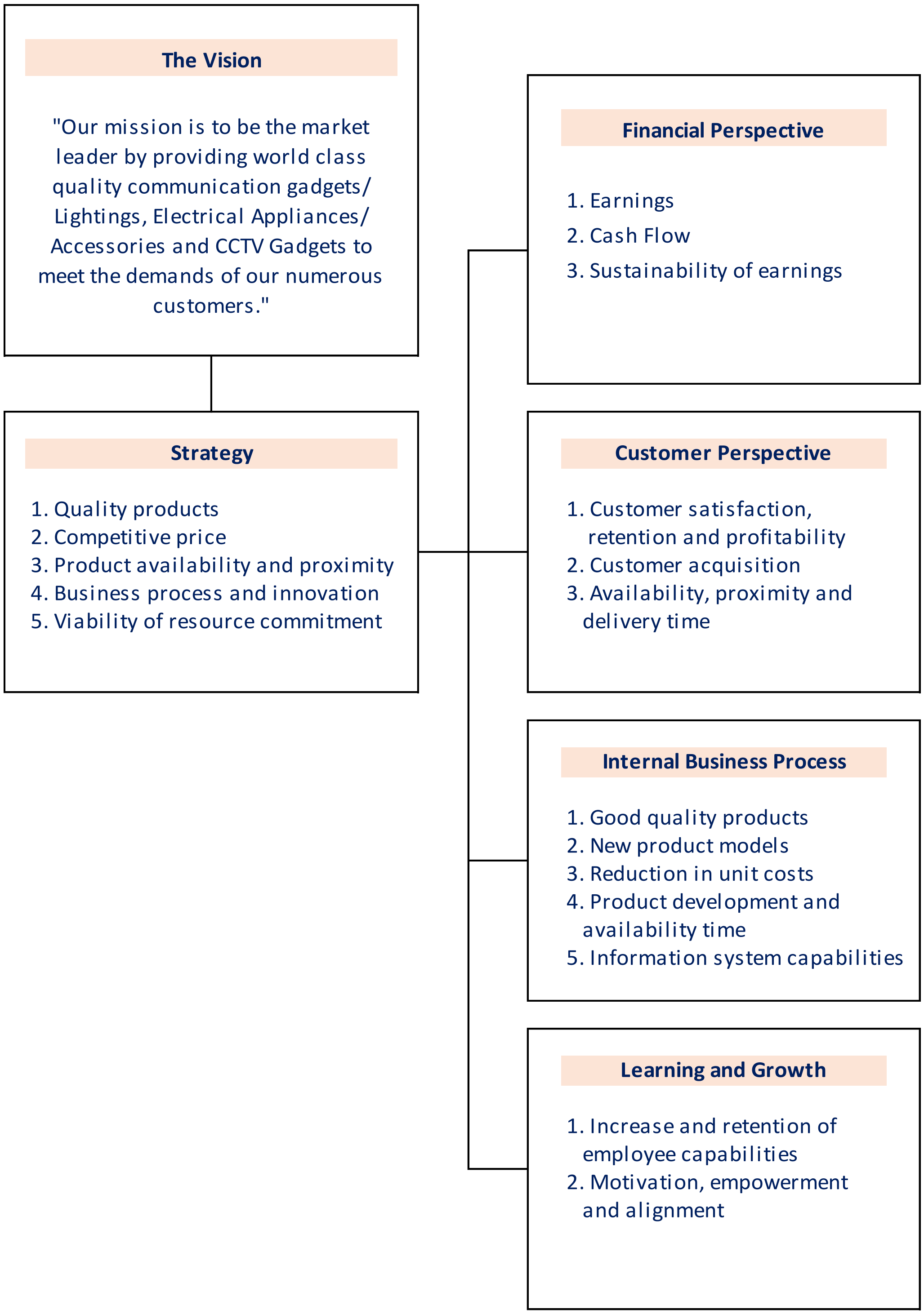

Figure 5.1: Strategic objectives as adapted for the company's BSC development process

Source: Adapted from Kaplan and Norton (1993:6)

Figure 5.1 above shows the adapted strategic objectives for the recommended development and implementation of the BSC system by the company (Sections 1.1, 2.3.3 and Table 2.2).

5.2.3.6 Analysis for decision-making: Financial performance measures

Analyses for decision-making include cost and financial analyses such as variance analysis (associated with standard costing), overhead analysis, capital spending analysis (associated with long-term projects/investments), cost behaviour analysis (break-even analysis) and financial statement analysis (see Table 2.1). In the field of accounting and finance, these techniques or analyses relate considerably to risk management (Section 2.3.3). Thus, they are relevant and their inclusion in this study is justified. However, this may not be the case for variance analysis. It was indicated earlier in the discussion that the company does not have enough incentives to operate a more sophisticated costing system due to its production arrangement (see Section 5.2.3.3 above). Therefore, variance analysis (associated with the standard costing system) is not considered one of the analyses relevant to the company's decision process. Nevertheless, the company regularly analyses and evaluates its overhead costs (against management expectations regarding the overhead profile) for cost control, profitability analysis and inventory valuation (sections 4.4.1.6 and 4.4.2.2). Administrative, selling and distribution expenses are not the only overheads in the company's cost structure. There are overheads associated with the process of bringing the products into saleable conditions and overheads associated with improving the quality of the products (Table 4.3; Section 4.2.1). Proper analyses of these overheads in terms of risk identification provide an indication of the likelihood of achieving the expected results. Regarding capital spending analysis, the company seldom executes projects that are long-term in nature. The capital spending of the company mainly constitutes the acquisition of the non-current assets that are required for the business operations and investments in branch operations (Section 4.4.1). While the former requires no sophisticated analysis except the implied assumption that the costs are recovered in due course from the revenue generated from the operations, financial commitments to branch operations require well-studied bases for projection of success. Hence, evaluating the viability of major capital expenditure proposals is necessary and required to provide a documented basis for decisions (Table 4.2 and Section 4.2.1). The oral interviews did not cover the aspects relating to the capital spending evaluation of the case company. However, the analysis of the questionnaire responses in relation to management levels and specialist areas (not included due to ethical consideration) indicate that the company's senior executive officials in the key specialist areas withheld opinion or disagreed that "major capital projects of the company are not implemented without a properly documented evaluation and financial analysis" (Response to Question 7 [17] Table 4.3, Section 4.3.1). This suggests the use of intuition, with informal or non-documented assessments in decisions relating to the company's capital spending. Although the company is experiencing significant growth in the size of its operation and achieving an increasing and relative level of formalisation in its structure, it is not devoid of potential limitations in its management accounting practices that are associated with companies of similar size or similar ownership structure (Section 2.3.3).

In relation to cost behaviour analysis (break-even analysis), the application of CVP analysis as a risk identification tool in assessing the prospects or the likelihood of the company realising its set profit targets was discussed in Section 5.2.3.3 above.

In relation to the company's financial performance measures, the findings indicate that financial measures relating to profitability and cash flow are associated with the year-end comprehensive financial reports. However, the findings further demonstrate that generating financial performance reports at shorter intervals (e.g. semi-annually, quarterly, etc.) could provide the basis for assessing the prospects of achieving projected performance levels and help define mitigating actions (Section 4.4.2.6).

In the case company, the management report or the comprehensive financial reports provide the information for performance measurements related to profitability and liquidity. Besides assessing the results of past activities, regular consideration of these important reports and measures could provide management with the highlights of the company's business risk exposures and form the basis for innovative actions. Business risk refers to the likelihood of financial and operating results falling below expectations. Thus, early signal of potential failure in achieving the target performance level is beneficial in providing for mitigation and innovative actions (sections 2.2.1.2, 2.2.1.3 and 4.4.2.6).

In addition to the reports mentioned above, the company has more frequent reports (not comprehensive) that cover sales in relation to branches and segments and also sales by products (weekly and monthly reports). Estimated product or total costs could be applied to assess profitability. However, more frequent (e.g. monthly or quarterly) comprehensive performance reporting is necessary in assessing the likelihood of achieving the projected performance level for each branch, market segment or the company as a whole. This will also help the management to monitor the trend in revenue and the associated overhead for the period. However, the challenges associated with the implementation and use of accounting software (including human capacity challenges) have adverse effects on the quality of the company's generation of cost and accounting information (sections 4.4.1.2 and 4.4.2.6).

The revised conceptual framework of the IASB (2018) provides the fundamental and enhancing qualitative characteristics of useful financial information. Relevance and faithful representation are the fundamental qualitative characteristics while comparability, verifiability, understandability and timeliness are the qualitative characteristics that enhance 'relevance' and 'faithful representation'. Information in the financial reports must be factual in terms of an entity's economic events and position for the period (faithful representation) and must possess confirmatory or predictive value to be relevant. The predictive value of the information provided in the financial reports underlines the usefulness of the analyses of financial statements in predicting the potential outcomes of the future activities of the organisation. This in turn enables the implementation of mitigation measures where necessary to enhance the likelihood of achieving the objectives of the business (Section 2.3.3).

5.3 CONCLUSIONS ON THE RESEARCH FINDINGS

5.3.1 Overview

The findings of this study were obtained by means of the analysis of empirical data and reference to the relevant information included in the literature review. They are descriptions of how the company's risk management process could be improved within the context of the application of management accounting techniques and practices. The findings show the significant risks that are inherent in the operation of the company and their classification as operational, business and strategic risks and include the description and the assessment of the existing risk management processes or measures. In this respect, product failure due to obsolescence and competitive pressure, which could be defined in terms of 'business risk', was described as the most important risk associated with the business operation of the company. Although the company has some procedures that could be regarded as risk management measures, the need for a formal risk management process with an ERM perspective is highlighted in the findings.

The findings further show the nature of the company's management control system in terms of the level of application of management accounting techniques. In this respect, the findings highlight the need for sufficient and more integrated management accounting information to enhance the company's ability to manage its significant risks.

The conclusions drawn from the findings of this study are presented in sections 5.3.2 and 5.3.3 under the two clusters of the research questions described in Section 2.1:

- The company's significant risks and the applicable risk management process
- The applicable management accounting techniques and their relevance in the risk management process

5.3.2 The company's significant risks and the applicable risk management process

The likelihood of product failure due to obsolescence and competitive pressure represents the most important risk associated with the company's operation. This is explained in terms of both the likelihood of occurrence and the potential financial impact (Section 5.2.1.2). This risk could be described in terms of business risk. Although the financial consequences and the implications for the company's brand could be very high, the risk of product failure due to production defects (operational risk) is not significant in terms of its likelihood of occurrence and possible transfer of financial loss to the overseas partners (Section 5.2.1.3).

In relation to the risk of losing substantial revenue due to extended product stock-out, a specific model for placing production orders is not conveniently applicable in the company's circumstances. In placing production orders, the company at least needs to consider the risk of product obsolescence on the one hand, and on the other hand, the risk of significant revenue losses resulting from extended product stock-outs. Although periodic analysis of product performance is considered in placing orders, the risk of losing substantial revenue as a result of product stock-out is still inherent in the company's operation. Broader and sufficient management accounting information could be very useful in mitigating this risk (Section 5.2.1.4). The conclusions drawn from the findings in respect of product differentiation and branch operation exposures, accounting and internal control exposures, credit loss and financial risk exposures are shown in the following paragraphs.

The ability of the company to achieve lower product costs is a strategy (cost leadership) that is critical to the success in its type of business. Lower product costs will enable the company to compete favourably based on lower selling prices or better selling prices relative to product quality. Moreover, the company applies product differentiation and expansion of branch operations to serve identified customer and market segments where opportunities to compete are identified. Risk of product failure (described earlier) is associated with product differentiation and revenue growth failure and increased operational risk exposures are all associated with expansions through branch operations (Section 5.2.1.5).

Software failures and user-capacity challenges, limitations in accounting and in other procedures, internal control exposures (relating to inventory and cash) and potential deficiencies in supervisory roles represent the key sources of the company's operational risk exposures (Section 5.2.1.6).

The company has recorded a substantial decline in its exposure to credit losses with the introduction of a more effective credit policy and recovery techniques. The previous credit losses, which were substantial in value, are indicative of the dangers associated with poor assessment or lack of proper assessment of such exposures. It is the researcher's opinion that credit exposures could be voluntarily taken by the company as a strategy to compete more effectively and to earn superior returns by taking advantage of the opportunities (higher revenue) that the granting of credit lines to customers could bring (Section 5.2.1.7).

Financial risk associated with exposures to interest rate changes and foreign exchange fluctuations is not significant to the company's operation in terms of the likelihood of occurrence and financial impact. Moreover, scarcity of essential products or services usually results in higher local transportation cost. However, the overall potential impact of such events on the company's operation is not considered significant (Section 5.2.1.8).

Although practices exist that could be regarded as risk management functions, the company does not have any formal risk management process, especially when defined in terms of ERM (Section 5.2.2). The company should consider developing a formal framework for an integrated risk management function. The integrated risk management framework should be adapted to the company's existing structure. Details are provided in Table 5.3 (Item 9) and Section 5.4.2.5 below.

5.3.3 Applicable management accounting techniques and their relevance in the risk management process

The management considers management accounting reports in making many decisions and the input of consultants supports the managerial accounting reporting needs of the company. However, the size and nature of the company's operation require a more sophisticated management accounting information system. This is evidenced in the need to apply sufficient and more integrated financial and operational information in respect of the product performance and prospects in order to support mitigation of the risk of revenue losses arising from extended product stock-outs (Section 5.2.3.2).

In relation to the cost accounting system, the operation of the company's cost accounting system is not expected to be as sophisticated as that of a full manufacturing concern (Section 5.2.3.3). However, the cost leadership strategy drive of the company requires that the company implements a costing framework that provides for proper estimation and ascertainment of product cost and other relevant costs associated with the company's operation. A functional cost accounting system could form the basis for efficient cost management, product price setting and the provision of a reliable forecast.

Anther cost analysis that could be applied in the company's short-term planning is the CVP analysis. The analysis could also be applied as a risk-exposure function to analyse the sensitivity of adjustments or changes in the related cost estimates or variables to the expected performance of the company. However, its application is subject to the understanding and proper analysis of the company's cost structure with reasonable projection of the product mix (Section 5.2.3.3).

The company's business environment is volatile and highly competitive. Therefore, the application of contemporary practices such as target costing, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering is very common. These practices have significantly benefitted the company in the area of innovation drive and mitigation of the risk of product failure, which is the key risk associated with its business operation (Section 5.2.3.3).

Although the budgeting system (and responsibility centre reporting) is yet to be developed to support the feedback and feed-forward control functions, an operational budgeting and budgetary control system could serve as a framework for risk identification and assessment, risk exposure control and a mechanism for identifying opportunities for better cost management (Section 5.2.3.4).

The company has no formal reporting system that can be related to the BSC. However, the development of the BSC as a PMS that is aligned with the company's strategy leanings could immensely support the company's risk identification and mitigation function (Section 5.2.3.5). Thus, customer satisfaction measures aligned with the company's strategy could provide the indications of customer patronage and profitability prospects while properly aligned internal business process measures could enhance the ability of management to monitor the risk of system or process failures. Moreover, a staff appraisal system and aligned staff trainings exist in the company and continuous alignment of the staff capabilities, empowerments and motivation with the company's strategy is necessary for successful strategy implementation and accomplishment of the company's business objectives. These are all consistent with the risk management definition adopted for this study (Section 5.2.3.5).

Sufficient data for the analysis of financial performance is provided in the company's year-end comprehensive financial reports. However, generating financial performance reports on shorter periods would provide the management with lag measures (of financial performance) that could help define mitigating actions to influence future financial performance (Section 5.2.3.6).

5.4 RECOMMENDATIONS

5.4.1 Recommendations based on the research findings

Table 5.3 shows the recommendations offered based on the research findings analysed in Chapter 4 and discussed in this chapter (Section 5.2).

Table 5.3: List of recommendations

S/N	RISK EXPOSURE/CATEGORY OR EXISTING CONDITION	RECOMMENDATION FOR IMPROVEMENT	ANALYSIS AND LITERATURE REFERENCE
1	Accounting system: The nature and the size of the company's operation require a more sophisticated management accounting information system.	The company should continue its efforts to develop its financial and operational reporting systems to the level where sufficient, integrated and aggregated financial performance data and other operational information can be accessed as often as required for financial and operational projections and control functions (budgeting), BSC implementation and ease of other financial and cost analyses. Sophistication of the management accounting system refers to the operating capability of the system in generating timely, broad-based, integrated and aggregated information. This information must be at the level required to implement an effective risk management system such as ERM.	2.4.2, 5.2.3.2, 5.2.3.6 and 2.3.3
2	Product failure due to obsolescence and competitive pressures: Business risk exposure	No matter how intact and satisfactory the company's relationships with the customers, there is always the possibility of losing their patronage either in part or in full. Therefore, to increase customer profitability and maintain a strong market position, the company must always apply appropriate mechanisms to identify these possibilities in order to initiate informed mitigating actions. Customer satisfaction and profitability measures adapted to the strategic leaning of the company will likely enhance the ability of the company to measure and monitor the	5.2.1.2, 5.2.3.3 5.2.3.5, 2.2.1.1, 2.3.3 and 2.4.2

S/N	RISK EXPOSURE/CATEGORY OR EXISTING CONDITION	RECOMMENDATION FOR IMPROVEMENT	ANALYSIS AND LITERATURE REFERENCE
		prospects of customers' patronage. Hence, the development and use of the BSC as a performance measurement system should be considered by the management of the company. Moreover, contemporary techniques and practices such as target costing, benchmarking, value analysis or value engineering, functional analysis, and tear down analysis or reverse engineering have proved to be useful in the company's mitigations of business and strategic risks (downside risks) and are also being applied as tools in exploring opportunities for better business results (upside risks). Therefore, improvement in the sophistication of the company's managerial accounting system will likely improve the usefulness of these techniques.	
3	Revenue losses due to product stock-out: Operational risk exposure	It is important for the company to maintain a balance between the management of the risk of product obsolescence and the risk of losing revenue as a result of product stock-out. A well-developed financial and operational reporting system in this regard could provide on-time information to support proactive managerial actions, especially in relation to production and delivery cycles, forecast and actual product performance. Explicit discussions with the overseas partners and proper understanding of their operation are required as part of the managerial accounting	5.2.1.4, 5.2.3.2 and 2.3.1

S/N	RISK EXPOSURE/CATEGORY OR EXISTING CONDITION	RECOMMENDATION FOR IMPROVEMENT	ANALYSIS AND LITERATURE REFERENCE
		information to improve decisions associated with this exposure. The increase in awareness of various internal and external variables that can contribute to the success or failure of set objectives is becoming a priority in organisational governance.	
4	Product differentiation failures and failures in expectations regarding branch revenue growth: Strategy risk, business risk and operational risk	Financial commitment to branch operations requires a well-studied basis for projection of success. This involves evaluating the viability of the proposed branch operations (capital spending analysis) to provide a documented basis for decisions. The success of a product differentiation strategy depends on customers' perspectives of the uniqueness of the particular product in terms of quality. Therefore, the potential impact of possible rival strategies should be honestly and properly assessed before implementing a proposed differentiation strategy. This does not denote the avoidance of risks but instructs that the company should accept risks with full knowledge of the risks and only where doing so has a reasonable likelihood of creating value for the business or leads to achieve the desired goals.	5.2.1.2, 5.2.1.5, 5.2.3.6, 2.2.1.1, 2.2.1.2, 2.2.2.3 and Table 4.3
5	Failures in accounting and internal control procedures: Operational risk exposures	The associated risk implications should be considered before, during and after the implementation of operational changes. Identification of operational risk exposures is necessary to enable management to put appropriate mitigation measures in place to ensure that the company's operation is not	

S/N	RISK EXPOSURE/CATEGORY OR EXISTING CONDITION	RECOMMENDATION FOR IMPROVEMENT	ANALYSIS AND LITERATURE REFERENCE
		adversely affected or opportunities to improve the company's value are not eroded. According to literature, external events could trigger this type of risk. However, it is the responsibility of management to ensure a minimum zone of tolerance for the preventable aspects of this risk category since complete elimination is not usually possible. Thus the activities of the company should be supervised in line with the strategic objectives of the company. Evaluation and consideration of performance measures related to employee learning and growth and the internal operating process will likely contribute to the effectiveness of mitigation measures associated with operational risk exposures.	
6	Exposure to credit losses: Operational and strategy risk	In relation to the acceptance of credit loss exposures as a competitive strategy, the company must continually review its credit policy and recovery techniques to mitigate credit losses while ensuring the success of the strategy.	5.2.1.7, 2.2.1.2 and 2.4.1
7	Inoperative budgeting system and non-existence of formal reports that include the measures according to the BSC	The company should structure its reporting system (subsequent to improvement in its IT competence) to incorporate non-financial measures of the BSC adapted to the peculiarities of the company. Moreover, the advancement of the accounting information system will enhance the implementation and operation of the budgeting system (including budgetary control). The lag and the lead measures of the BSC (as	5.2.3.2, 5.2.3.4, 5.2.3.5, 5.2.3.6, 2.2.1.1, 2.2.1.3, 2.4.1 and Table 2.2

S/N	RISK EXPOSURE/CATEGORY OR EXISTING CONDITION	RECOMMENDATION FOR IMPROVEMENT	ANALYSIS AND LITERATURE REFERENCE
		adapted) can be explained, respectively, in terms of feedback and feed-forward control models. The principles of the models are consistent with the risk management definition adopted for this study.	
8	Financial risk exposures: Not significant	Although not significant in terms of likelihood, the company should pay attention to the objective assessment of possible financial consequences of financial risk exposures. This will enable appropriate response actions when necessary. The financial risk category is one of the three major, distinct areas that inform the development of risk management.	5.2.1.8, 1.2 and 2.2.1.2
9	The company does not have any formal risk management process, especially in relation to ERM Practices exist that can be regarded as risk management functions. The company needs to develop a formal risk management process.	The company should consider developing a formal framework for an integrated risk management function. This will provide the basis for the co-ordination of risk-related functions (risk identification, measurement and control) on an enterprise-wide level. The level of formality should, however, be aligned with the company's size and structure.	5.2.2, 2.2.2.2 and 2.2.2.3

BSC: Balanced scorecard

5.4.2 Proposed actions for implementing the recommendations

5.4.2.1 General

Evaluate the recommendations and proposed actions for projected changes or improvements in the company's system of operation and consider the associated cost implications. The evaluation will guide the management on the extent of the commitment (time and financial resources) required to achieve an improved process.

5.4.2.2 Accounting software (computerisation of management accounting information system)

Evaluation of the company's accounting software that is in use or proposal for replacement in terms of the following:

- Its appropriateness for the nature, size and structure of the company's operation
- IT hardware/network requirements and system support
- Incorporation of other operational (non-finance) information
- Appropriate vendor/support service provider
- Required staff capabilities and the implications of software replacement and non-replacement

The company should deploy considerable effort and resources to achieve successful computerisation of its management accounting information system. Management accounting reports could be generated more often and in real time with the successful implementation of a computerisation program. Moreover, successful computerisation could provide for real-time or early access to reports regarding products, branches or segments, details of debtors and even non-financial measures relating to customers satisfaction (Section 2.3.3). This will facilitate the operation of the budgeting system, the application of the BSC measures and the use of other financial and cost analyses.

5.4.2.3 Management accounting practices

The company should endeavour to implement a fully operational budgeting system and reporting system according to the adapted lag and lead measures of the BSC (Table 2.2) and fully maximise their usefulness in terms of feedback and feed-forward controls (Section 2.3.3). The control functions in an organisation in terms of feedback and feed-forward control models depict the principles of risk management—consistent with the risk management definition adopted in this study (sections 2.2.1.1, 2.2.1.3 and 2.4.1). From a management accounting perspective, control functions in an organisation are mainly organised as the 'management accounting control systems, a term that is often used interchangeably with the terms 'accounting control systems' and 'management control systems' (Section 2.4.1). A management accounting control system represents a variety of control mechanisms that are applicable in organisations and consists of a set of MAPs such as budgeting, costing system and periodic performance reporting including non-financial measures (sections 2.3.3 and 2.4.1).

5.4.2.4 Internal control system

A compliance-based approach is required to mitigate 'preventable risks', that is, risks arising from the actions of employees and managers (i.e. a preventable aspect of operational risk) that should be eliminated or avoided since they are under the control of the organisation (Section 2.2.1.2). As indicated in the referred literature, the company should ensure a minimum zone of tolerance since complete elimination is not feasible. Hence, the company must continue to review the effectiveness of its internal control system to ensure that it is improved upon vis-à-vis the associated experiences and developments in the company. Risk factors relating to the accounting and internal control procedures are usually addressed through the evaluation, adjustments and improvement of the internal control systems. Moreover, the literature records that experiences and knowledge drawn from past internal control processes of an organisation usually inform the structure of the design and the implementation of the ERM framework for that organisation (Section 2.2.2.2).

5.4.2.5 Risk management framework

The company need not implement a full ERM department as in the Dangote Group (Section 4.2.2) but can align the risk management activities of the company with the existing organisational structure. In relation to the application of the ERM framework, some organisations, especially in the financial sector and other risk-intensive businesses, have risk management departments and risk management positions (e.g. CRO) that are considered indicators of ERM implementation. However, each organisation can determine how they implement ERM since the approach is still developing with no universally accepted standardised format for its implementation (sections 2.2.2.2 and 2.2.2.3). Hence, the following actions are recommended to enable the company to align or associate its risk management functions with the existing organisational structure:

- Risk orientation: General staff training (risk-awareness training) on risk identification and communication should be adapted according to the nature of the business and the complexity of the business operation. Training could be carried out in groups comprising the company’s departments or units. Promoting risk awareness based on the understanding of the nature of risk should be the starting point of any risk management process. The second step is to measure risk, and the third step is to control it (section 2.2.2.1).

- Key officials: More detailed and more sophisticated trainings on risk management for key officials whose responsibilities include handling or the co-ordination of the company's risk management function are advised. Enterprise risk management training for different levels of the organisation is recommended to achieve staff capability in identifying risk events/risk factors or changes that affect or influence those factors and communicating the same in a prescribed manner. This will provide the inputs for comprehensive risk reporting and form the basis for extensive risk discussions at the appropriate management levels, including the initiation of mitigation actions. A holistic approach to risk management goes beyond compliance procedures and includes open and explicit risk discussions at the appropriate management levels (Section 2.2.1.2).
- Risk communication and reporting: This involves the opening and maintaining of an appropriate risk register and the determination of the nature and intervals of comprehensive risk management reports. This could be carried out with the assistance of external consultants. It is further recommended to associate comprehensive risk reports with periodic comprehensive management accounting reports, the same in principle as risk reports associated with year-end financial statements. Noteworthy is that risk reporting is increasingly being viewed by organisations as adding value to the overall quality management rather than mere compliance with reporting requirements (Section 2.3.3).

- Key staff joining/maintaining membership of relevant professional associations, including risk management bodies with up-to-date attendance of continued professional development trainings should be encouraged. This will enhance and sustain the company's risk management framework.

5.5 SUMMARY OF THE STUDY

This research project aimed to determine by means of an analysis of the literature review and empirical findings how the risk management process of the case company could be improved within the context of the application of relevant management accounting techniques. The research was inspired by the company's quest to develop and adopt transparent and more visible measures to improve its management processes in order to ensure effective and efficient management of all the significant risks that are inherent in its operation. The study consists of five chapters, which are briefly described below.

Chapter 1 provided an overview and indicated the relevance of the study. The research problem, significance of the study, study objectives, research questions developed for the study and a description of the research methodology were presented. The chapter reflected (as an overview) that the risk sources of the company consist of the complexities associated with the various aspects of its operation and the nature of its business environment. The chapter further showed that the company seeks to develop a formal and transparent process that will enable proper management of the significant risks inherent in its operation. Thus, the focus of the study was on the application of management accounting techniques to improve the company's risk management process. Furthermore, the appropriateness of the qualitative research approach applied in the study was introduced in this chapter.

Chapter 2 covered the review of related literature that was carried out to provide a sound theoretical basis for the study. The review was applied to define the context of risk, risk management and management accounting techniques as applied in the study. The organisational context of the term 'risk' was adopted for the study; risk management and risk management process were defined in the chapter from the perspective of ERM. Management accounting techniques, MAPs, MASs and management accounting control systems were applied interchangeably to refer to the management accounting information, the organisational information systems and the methods that support the business decisions that are applied by organisations in their planning and control functions. The outcome of the review was associated with the empirical findings to describe how the risk management process of the company could be improved within the context of the application of management accounting techniques.

Chapter 3 provided a detailed description of the research design, demonstrating the appropriateness of the data collection method and the method of analysis applied in the study to ascertain how the risk management process of the company could be improved within the context of the application of relevant management accounting techniques. This was a qualitative study (single case), and interviews were used as the main instrument of data collection. Prior to the interviews, structured questionnaires were administered to gain an overview of the company's management accounting system and risk management culture. The overview provided the specific leads for the interviews.

Chapter 4 covered the analysis and the interpretation of the questionnaire and interview responses and included the description of the systems in place as checked directly by the researcher. In this chapter, the researcher identified and associated related themes (from the interview responses) with the relevant clusters of the research questions. Cluster 1 related to determining the significant risks inherent in the company's operation and the applicable risk management process, while Cluster 2 dealt with the applicable management accounting techniques and how they could be applied to improve the company's risk management process.

The analysis indicated (in terms of likelihood and financial impact) that the risk of product failure due to obsolescence and competitive pressure represents the most important risk for the company. Other risks considered were risk of revenue losses due to product stock-out, product differentiation failures and failures in expectations of branch revenue growth, failures in accounting and internal control procedures and exposure to credit losses. Equivalent practices and procedures exist within the company that can pass as risk mitigation measures. However, the analysis reflected that the company does not have any formal risk management framework, especially in terms of ERM. Moreover, the analysis indicated that the management accounting practices of the company are still below the level of sophistication required to enhance its risk management process fully.

In this chapter, Chapter 5, the key findings of the research are further analysed and discussed in association with the literature, providing the basis for well-derived conclusions and recommendations regarding the research findings.

5.6 FURTHER RESEARCH

Details regarding suggestions for further studies are as follows:

- Literature indicates the need for additional research on the interrelationship between risks, risk management and management accounting and control practices. Risk management has thus been approached in this study from the perspective of management accounting techniques and practices. However, the study is limited to a single case (a medium-sized company operating in a developing economy). Further research is, therefore, recommended on the use of management accounting techniques and their implication for risk management function in other organisations of a similar or related size that are operating in the same or a similar environment within the same and other business sectors. Multiple case studies will provide for a cross-case analysis. This study is a single case and cross-case analysis was not obtainable.
- Further research is also recommended on the challenges and cost-effective ways of developing appropriate information system capabilities in SMEs operating in the same or a similar environment. Limitations in information system capabilities are included in the significant key issues identified in this case. Therefore, there is a need to know more on how firms (multiple cases) in the same operating environments cope with this challenge.
- It is further recommended that more studies should be carried out on the adoption and use of the BSC as a PMS for SMEs in the same or a similar business environment. Literature records that the BSC is probably the most

widely used approach to mitigate the adverse consequences of relying or focusing excessively on short-term financial performance measures. The importance and implications of this assertion should be empirically tested with multiple cases associated with the same environment as the case company. The findings of this study indicated that the adapted BSC measures as presented in Table 2.2 are applicable and useful in the context of this case. Knowledge in this field will, therefore, be improved if the scope of the examination is expanded to include more cases.

5.7 CONCLUDING REMARKS

It is the researcher's opinion based on his reflection of the findings that the company should further commit to developing its capacity to record, integrate, aggregate and analyse its financial and operational information on a timely basis.

The main objective of management accounting information should not be confined to meeting the statutory reporting requirements but expanded to develop and advance the managerial decision-making process. Implementing an ERM system under such a developed management accounting system would be more feasible.

A well-developed management accounting information system would include an operational budgeting and budgetary control system that supports the feedback and feed-forward controls. It could also enable the design and development of the BSC system for performance measurements. These management accounting techniques, as established in the literature and the analysis of interview responses, could improve the effectiveness of the management in identifying, assessing and mitigating the significant risks associated with the business of the company.

The operational and financial information considered together with the information gathered from external sources could enhance the company's ability to identify its key risks and to respond in a very effective manner.

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ANNEXURES

ANNEXURE A: FACULTY OF ECONOMICS AND FINANCE RESEARCH ETHICS COMMITTEE APPROVAL

Tshwane University of Technology

Faculty of Economics and Finance Research Ethics Committee [FREC-ECO]

The TUT Research Ethics Committee is a registered Institutional Review Board (IRB 00005968) with the US Office for Human Research Protections (IORG# 0004997) (Expires 19 Jan 2014). Also, it has Federal Wide Assurance for the Protection of Human Subjects for International Institutions (FWA 00011501) (Expires 31 Jan 2014). In South Africa it is registered with the National Health Research Ethics Council (REC-160509-21). The FREC-ECO is a subcommittee of the TUT Research Ethics Committee

31 May 2018

Ref #: FREC 2018/003-ECO
Name: je aghachi
Student: 217113008

Mr JE Aghachi
jaghachi@gmail.com

Dear Mr Aghachi

Title: Improving the ris management process of Fedan Investments LTD (FIL), Lagos, Nigeria, through application of management accounting techniques – A case study of Fedan Investments LTD (FIL), Lagos Nigeria
Investigator: JE Agachi
Programme: MTech Cost and Management Accounting
Supervisor: Prof HE Klingelhöfer
Co-supervisor:

Thank you for submitting your proposal for ethics clearance.

The Faculty of Economics and Finance Research Ethics Committee reviewed the documents.

The committee approved the ethical clearance on regarding the questionnaire, the informed consent, the interview consent and the informed consent for the interview.

The Committee wishes you well with your research endeavours.

Signature

Chair / Deputy-Chair
Faculty Research Ethics Committee
[Ref#: 2018/003-ECO

cc Supervisor/HoD/etc.

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ANNEXURE B: THE QUESTIONNAIRE

QUESTIONNAIRE SURVEY

(Tick as appropriate)

PART A - SECTION 1

The following management accounting practices are relevant in minimising the uncertainties associated with the company's (FIL) business decisions and thus increase the likelihood (chances) of success. Kindly indicate, for each item below, if you **agree** or **disagree** with this assertion:

DESCRIPTION OF MANAGEMENT ACCOUNTING PRACTICES	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Setting of long term (strategic) goals in pursuance of the company's vision, and providing the leadership to put those goals into effect.					
2. Supervising the operations of the company by the management, and enabling periodic reporting of activities, especially in relation to **profitability** and **liquidity**.					
3. Implementation of a visible **cost accounting system** to provide a framework for ascertaining the cost of each product, activities, units, branches, etc. for profitability analysis, inventory valuation, cost control, and planning.					
4. Implementing a formal process of setting periodic financial and performance goals regularly with **budgets**; and always carrying out a quantitative investigation of the difference between actual and planned performance.					
5. Maintaining a comprehensive performance measurement system that provides a framework for reporting (in addition to financial performance) customers' level of satisfaction and future needs, improvements in the internal operating processes, and employee learning and growth.					
6. Evaluating the viability of major capital expenditure proposals to provide for a documented basis for decisions.					
7. Performance of sensitivity 'what if' analysis with budgets and capital expenditure proposals, especially in relation to the effects of political, economic, social and technological factors.					
8. Defining the nature, content and the frequency of management accounting and internal audit reports.					

PART A - SECTION 2

Please indicate your **agreement** or **disagreement** with each of the following risk management and management accounting practice statements in relation to Fedan Investment Limited.

RISK MANAGEMENT AND MANAGEMENT ACCOUNTING DESCRIPTIONS	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9. **Risk** is involved in doing any kind of business anywhere in the world. It represents the degree of uncertainties associated with expected outcome of any activity. The company accepts risks, where doing so contributes to value creation or leads to achievement of desired goals.					
10. The company has an approved risk management policy and tolerable risk criteria with clear and identifiable key risk indicators.					
11. The management is always aware of the company's strengths, weaknesses, opportunities, and threats as they arise.					
12.The company regularly reviews its business plans in respect of impacts of risks on the critical activities associated with the execution of the plans.					
13. Administrative, selling and distribution expenses are not the only overheads in the company's cost structure, there are overheads associated with the process of bringing the products into saleable conditions, and also overheads associated with products quality improvements.					
14. Overhead absorption rates and the direct costs of products form the basis for setting or reviewing product prices.					
15. The company has no formal system or prescribed method for setting and reviewing selling prices.					
16. The company has a documented budgeting process and budgetary control procedure.					

RISK MANAGEMENT AND MANAGEMENT ACCOUNTING DESCRIPTIONS	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
17. Major capital projects are not implemented without a properly documented evaluation and financial analysis.					
18. The company regularly analyses its competitive position, and initiate programs to ensure boast in its market share.					
19. Types, nature, content and the frequency of periodic management accounting reports and internal audit reports are well defined and documented.					

PART B

Please indicate how often each of the following events happen in the company. Apply the following scales: **[5]** Happens more than once a year in the company; **[4]** Happens about once a year in the company; **[3]** Happens every 5 years or more in the company; **[2]** Has only happened once in the company; **[1]** Has never happened before in the company.

RISK EVENT DESCRIPTION	HOW OFTEN DOES IT OCCUR? (REFER TO THE SCALE ABOVE)				
	5	4	3	2	1
20. Major disruption in activities due to operational inefficiencies like limitations in procedures, software, IT and other technical failures, human errors, mistakes, etc.					
21. Liabilities and other losses due to non-compliance with tax laws, statutory reporting requirements, and environmental regulations.					
22. Major disruptions in operation and loss of revenue due to failures on the part of suppliers/producer partners.					
23. Failure of company's product in the market due to defects, obsolescence, competitive pressures, etc.					
24. Loss of major customer(s) to other competitors.					
25. Loss of major customer(s) due to political and economic crisis, unrests, terrorism, etc.					
26. Losses and increased liabilities due to scarcity of foreign exchange and rate fluctuations.					
27. Losses and increased liabilities due to unfavorable changes in CBN Monetary Policy Rate (MPR).					
28. Increase in cost of operation due to scarcity of essential products or services, e.g., petroleum products and transport services.					

	5	4	3	2	1
29. Bad debt losses, contested customer balances, and prolonged debt recovery					
30. Closure of operational segment or branch due to unfavorable changes in laws and regulations, political and other crisis, or due to inability of the segment or branch to generate sufficient revenue to cover cost.					

Thank you

ANNEXURE C: INFORMATION LEAFLET AND INFORMED CONSENT FOR THE QUESTIONNAIRE RESPONDENTS

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DEPARTMENT OF MANAGERIAL ACCOUNTING AND FINANCE

IMPROVING THE RISK MANAGEMENT PROCESS OF A BUSINESS ORGANISATION WITH THE APPLICATION OF MANAGEMENT ACCOUNTING TECHNIQUES – A CASE STUDY OF FEDAN INVESTMENT LTD (FIL), LAGOS NIGERIA

INFORMATION LEAFLET AND INFORMED CONSENT

Primary investigator: Mr JE Aghachi, M Tech (Cost and Management Accounting)

Study leader: Prof. HE Klingelhöfer, Department of Managerial Accounting and Finance, Tshwane University of Technology, Pretoria

Dear Research participant,

You are invited to participate in a research study that forms part of my formal MTech Studies. This information leaflet will help you to decide if you would like to participate. Before you agree to take part, you should fully understand what is involved. You should not agree to take part unless you are completely satisfied with all aspects of the study.

This study is concerned with describing how the process of managing various risks facing the company in its operations could be improved, within the context of application of relevant management accounting techniques, and thus will require getting your perceptions, opinions and other information regarding the company's risk sources and the relevance of management accounting techniques in managing these risks.

If you decide to take part in the study, you are required to complete the attached questionnaire. Please make sure you answer all the questions. There is no right or wrong answers. This will not take more than 40 minutes of your time.

Your participation in this study is entirely voluntary. You have the right to stop at any stage of answering the questionnaire without any penalty or future disadvantage whatsoever. You do not even have to provide the reason/s for your decision. Note that you are not waiving any legal claims or rights because of your participation in this research study. All information obtained during the course of this study is strictly confidential. The information received will only be used for research purposes and will not be released for any employment-related performance evaluation, promotion and/or disciplinary purposes.

Your questionnaire responses and other information will be kept stored in a secure place. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. The results of this study might be published in an academic Journal and presented at conferences, but without revealing the identity of any respondent.

All parts of the study will be conducted to international accepted ethical principles.

Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the TUT Research Ethics Committee, Prof WA Hoffman, during office hours at Tel (012) 382 6265/46, Email hoffmannwa@tut.ac.za. Alternatively, you can report any serious unethical behavior at the University's Toll Free Hotline 0800 21 23 41. The ethic clearance number of the study is ....

The primary investigator, Mr JF. Aghachi can be contacted at Tel +234 826 76 2926, +27 63 288 3386 via email jaghachi@gmail.com

ANNEXURE D: INTERVIEW CONTENT AND PROCESS

The researcher will seek to establish (by means of analysis of completed questionnaires, interviews, close observations and review of available company documents) the key risks facing the company, the applicable risk management process and the applicable management accounting techniques and practices, and most importantly, describe with the aid of review of related literature how the management accounting techniques can be applied to support or improve the risk management process of the company.

The interviews will be kept within the main question areas. However, there will be openings to get the interviewee's own ideas and feelings, and opportunities for follow-up questions.

The selected respondents will be interviewed to verify their opinion regarding:

1. Key risks associated with the company's operation
2. Applicable risk management process (risk governance)
3. Applicable management accounting techniques/practices, and
4. The relevance of the management accounting practices in the applicable risk management process.

The interview, close observation and analysis of available documents will, as well, cover the following key study points:

1. Value chain and supply chain analysis and the internal operating processes (including the budgeting system),
2. SWOT and PEST analysis,
3. Analysis of key products competitive strength:
   - Product design (company design or general product),
   - Market ratings: 1st, 2nd, 3rd, 4th, 5th,
   - Possible reason(s) for products performance/position: Quality [ ] Price [ ] After-sales support [ ] Company's goodwill [ ],
   - Product life-cycle: year lunched in the market and expected market life (Already obsolete [ ] 1 – 2 years [ ] 3 – 5 years [ ] Above 5 years [ ]),
   - Percentage contribution to total revenue in the last accounting year/quarter/month,
   - Percentage contribution to total profitability in the last accounting year/quarter/month

Although some questions are repeated in a disguise manner in the questionnaire survey to provide for measurement of validity of answers, it is the researchers expectation that the above key study points will provide greater measurement of validity.

ANNEXURE E: INFORMATION LEAFLET AND INFORMED CONSENT FOR THE INTERVIEW PARTICIPANTS

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This study is concerned with describing how the process of managing various risks facing the company in its operations could be improved, within the context of application of relevant management accounting techniques, and thus will require getting your perceptions, opinions and other information regarding the company's risk sources and the relevance of management accounting techniques in managing these risks.

If you decide to take part in the study you will be required to complete a questionnaire and also grant an oral interview. Please make sure you answer all the questions. There is no right or wrong answers. This will not take more than 40 minutes of your time.

Your participation in this study is entirely voluntary. You have the right to stop at any stage of answering the questionnaire without any penalty or future disadvantage whatsoever. You do not even have to provide the reason/s for your decision. Note that you are not waiving any legal claims or rights because of your participation in this research study. All information obtained during the course of this study is strictly confidential. The information received will only be used for research purposes and will not be released for any employment-related performance evaluation, promotion and/or disciplinary purposes.

Your questionnaire responses and personal information will be kept stored in a secure place. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. The results of this study might be published in an academic Journal and presented at conferences, but without revealing the identity of any respondent.

All parts of the study will be conducted to international accepted ethical principles.

Should you have any questions regarding the ethical aspects of the study, you can contact the chairperson of the TUT Research Ethics Committee, Prof WA Hoffman, during office hours at Tel (012) 382 6265/46, Email hoffmannwa@tut.ac.za. Alternatively, you can report any serious unethical behavior at the University's Toll Free Hotline 0800 21 23 41. The ethic clearance number of the study is ....

The primary investigator, Mr JE Aghachi can be contacted at Tel +234 826 76 2926, +27 63 288 3386 via email jaghachi@gmail.com

CONSENT

I hereby confirm that I have read and understood the previous pages about the nature, conduct, benefits of the study. I am aware that the results of the study will be anonymous processed into research report. I understand that my participation is voluntary and that I may, at any stage, without prejudice, withdraw my consent and participation in the study I also understand that the results of the study will be published in a thesis and journals.

Research participant's name: ________________________________ (Please print)

Research participant's signature: ______________________________

Date: ____________

Researcher's name: ____________________________________ (Please print)

Researcher's signature: ______________________________

Date: ____________

ANNEXURE F: QUESTION AND DISCUSSION LIST FOR THE INTERVIEWS

INTERVIEW A QUESTION AND DISCUSSION LIST

Question 1
What is your view regarding "product failure in the market due to defects, obsolescence, competitive pressures, etc." as the most important risk of the company?

Question 2
What is your view regarding "major disruptions in activities due to operational inefficiencies like limitations in procedures, software, IT, human errors and mistakes" as another important risk to the company?

Question 3
In relation to the likelihood of loss of customers, can you discuss the nature of customers' patronage within the past few years?

Question 4 (I)
Do you consider credit losses (bad debts), contested balances and prolonged debt recovery as risks associated with the operation of the company?

Question 4 (II)
Okay - What do you think led to so much credit losses?

Question 4 (III)
But do you have instances of contested customer balances?

Question 5
Have you experienced, in recent years, any closure of operational segment or branch due to unfavourable changes in laws and regulations, political and other crisis, or due to inability of the segment or branch to generate sufficient revenue to cover cost?

Question 6 (I)
Do you consider interest rate changes as part of your risk exposures?

Question 6 (II)
That means loss of revenue due to product shortages. Are your suppliers responsible for this?

INTERVIEW A QUESTION AND DISCUSSION LIST

Question 6 (III) *But in respect of expected product quality, are there instances that the suppliers have been faulted.*

Question 7 (I) *What is your view regarding "the increase in the cost of operation due to scarcity of essential products or services, e.g., petroleum products and transport services" as an important risk associated with your operation?*

Question 7 (II) *Beyond transportation cost, can you describe your exposures in relation to losses or damages during the transportation of your products from one location to another?*

Question 7 (III) *What of insurance cover?*

Question 7 (IV) *And also you don't know – within the country – transportation of goods within the country.*
Question 8 *Do you in any way consider "foreign exchange fluctuations" as an important risk associated with the operation of the company?*

Question 9 (I) *In relation to the value chain of your main products, can you describe the level of control the company has over each process?*

Question 9 (II) *That means that the company is almost in control of the entire process and one can refer to your suppliers as your "production partners"?*

Question 10 (I) *What are the constituents of your product costs?*

Question 10 (II) *What about the costs associated with the process of bringing the products into saleable conditions, and also overheads associated with products quality improvements?*

INTERVIEW A QUESTION AND DISCUSSION LIST

Question 10 (III) The cost of the department handling this – how is it treated?

Question 10 (IV) Okay – can you say you have a formal cost accounting system?

Question 11 (I) Can you describe the company's budget, budgeting and budgetary control system?

Question 11 (II) What benefit do you think the company can derive by having an effective budget and budgeting system, especially in relation to all these risks that we mentioned?

Question 12 (I) What is the nature of "responsibility centre reporting" and its essence in the operation of the company?

Question 12 (II) What kind of issues or problems do you think that will be solved if there is a proper accountability in respect of defined responsibility centres?

Question 13 Do you have a formal way of assessing and reporting customer satisfaction ratings… and generally measuring how your customers see the company and its products?

Question 14 (I) Please describe any formal mechanisms or measures you have in place that indicate improvements or dips in your operating processes.

Question 14 (II) You agree these measures could be very relevant in managing your operational risks?

Question 15 (I) Do you have any formal measures associated with employees' learning and growth and connected with the company's overall strategy?

INTERVIEW A QUESTION AND DISCUSSION LIST

Question 15 (II)
Are the people to be evaluated aware of the performance indices – the areas they are going to be evaluated on?

Question 15 (III)
Do you also have situations where training programmes are initiated?

Question 16
Do you always have the information on your profitability measures - profitability of each product, branches and the company as a whole, as at when needed for decision-making?

Question 17
Please do you have organisations that you take their activities, products or services as a benchmark to continually improve yours?

Question 18 (I)
How relevant is "target costing" to the company's drive to achieve or maintain a good competitive position and increase the likelihood of its overall success?

Question 18 (II)
Do you have, beside this, other products that you actually want to bring out at the lowest possible prices?

Question 19
What is the extent of involvement of managerial accounting function in the development and design of new products?

Question 20
Is "reverse engineering" or "tear down analysis" associated in any way with achieving or maintaining your competitive position?

Question 21
How do you consider the life cycle of your products or the estimated market life?

INTERVIEW B QUESTION AND DISCUSSION LIST

Question 1 *Are there formal practices or functions in the company that could be related as the risk management process or risk management function?*

Question 2 *To what extent are the internally generated reports, (especially from accounts, finance and internal audit, and probably marketing and sales) useful in the company's short term and long-term decisions?*

Question 3 *To what extent does the company depend on external auditors or consultants for gaps in managerial accounting?*

Question 4 (I) *How would you assess the managerial accounting reports of the company in terms of the following qualitative characteristics: Materiality, Faithful representation and Relevance (including timeliness)?*

Question 4 (II) *But you also appreciate that the company needs to achieve that to aid decision making?*

Question 5 *What is your view regarding "product failure in the market due to defects, obsolescence, competitive pressures, etc." as the most important risk of the company?*

Question 6 (I) *What is your view regarding "major disruptions in activities due to operational inefficiencies like limitations in procedures, software, IT, human errors and mistakes" as another important risk to the company?*

Question 6 (II) *But what about human errors and mistakes?*

Question 6 (III) *Do you think the situation would have been different if there was a report indicating that something is lacking in this area?*

INTERVIEW B QUESTION AND DISCUSSION LIST

Question 6 (IV)
That is really a loss of revenue?

Question 7
What is your view regarding "major disruptions in operations and loss of revenue due to failures on the part of the suppliers" as one of the risks associated with the company's operation?

Question 8
How do you adjudge "the increase in the cost of operation due to scarcity of essential products or services, e.g., petroleum products and transport services" as an important risk associated with your operation?

Question 9
Do you have a formal cost accounting system? How relevant is the system to the operation of the company?

Question 10 (I)
Does your managerial reporting cover overhead analysis? How do you apply the analysis?

Question 10 (II)
But do you analyse your overhead and apply the analysis in any way?

Question 11
Do you have a formal budgeting and budgetary control process? How has it been helpful in terms of managing your exposures?

Question 12
Do you consider the feedback and the feed-forward aspects of the budgeting system relevant to the company?

Question 13
Do you have a formal way of assessing and reporting customer satisfaction ratings… and generally measuring how your customers see the company and its products?

INTERVIEW B QUESTION AND DISCUSSION LIST

Question 14 (I) *Please describe any formal mechanisms or measures you have in place that indicate improvements or dips in your operating processes.*

Question 14 (II) *Okay, but in that case, that means you don't really have a formal way – a system for inventory replenishment?*

Question 14 (III) *But do you think you need it?*

Question 14 (IV) *In your case, that means you can have a formal process of inventory replenishment that is based on the peculiarity of your business. The process might include the consideration of products performance (analysis of sales and profitability).*

Question 14 (V) *Do you consider product profitability?*

Question 15 (I) *Do you have mechanisms in place to measure employees' learning and growth in relation to the company's overall strategy?*

Question 15 (II) *But the staff themselves. Do they understand the basis of the appraisal?*

Question 16 *But do you think the company should find a way to – implement the BSC performance measures to a certain level?*

Question 17 *Please do you have organisations that you take their activities, products or services as a benchmark to continually improve yours?*

INTERVIEW B QUESTION AND DISCUSSION LIST

Question 18 (I)
Is "target costing" one of the techniques you apply to secure a good competitive position and increase the likelihood the company's success?

Question 18 (II)
That is interesting. That means you apply value analysis/engineering and functional analysis, mainly breaking down a product to find out what you can reduce or add to achieve a particular cost.

Question 19 (I)
What of reverse engineering – is it associated in any way with your strategy towards achieving or maintaining your competitive position?

Question 19 (II)
So it is now others that are trying to do that with your own products?

INTERVIEW C QUESTION AND DISCUSSION LIST

Question 1

What is your view on the company's strategic positioning in relation to the following three typical strategies: cost leadership, differentiation and a focusing strategy?

Question 2

Can you describe any three of your key products in terms of design (company or manufacturer design), market performance (market position), performance factor (Price, Quality, After-Sales Support, Company's Goodwill...), and expected market life in years.

Question 3

Discuss how the company has applied the following techniques/practices to reduce the likelihood of product failures and achieve or maintain a good competitive stand in the market it operates: – target costing, benchmarking, value analysis or value engineering and functional analysis, tear down analysis or reverse engineering.

[I] In relation to an organisation whose activities, products or services provides a benchmark for the company's continued improvement

[II] In relation to the application of "target costing", "value engineering" and "functional analysis" as techniques to increase the likelihood of the success of the company's products and the overall achievement of its objectives

[III] In relation to the application of "tear down analysis" or "reverse engineering" as a technique to reduce the likelihood of product failures, while increasing the likelihood of overall achievement of the company's objectives

Question 4

No matter how intact and satisfactory the company's relationship with the customers is, there is always the possibility of losing their patronage either in part or in full. Therefore, to maintain a strong market position and increase customer profitability, the company must always apply appropriate mechanisms to identify these possibilities, in order to initiate informed mitigating actions. In your opinion, how relevant are the CONSIDERATION of the following measures (or how relevant could they be) to the company in this regard?

- ***a) Percentage market share***
- ***b) Percentage growth in business from existing customers***
- ***c) Total sales to new customers***
- ***d) Customer survey satisfaction ratings, etc.***

Question 5

How relevant do you rate the calculation/estimation and consideration of the following measures in achieving a more efficient process that supports the company's strategy and increases the likelihood of its success:

- ***Percentage of sales from new products***
- ***New product introductions versus competitors***
- ***Percentage of sales from new markets***

- *Development cycle time (time to the market)*
- *Unit cost trends*
- *Percentage of defective output*
- *Employee satisfaction survey ratings*
- *Annual percentage of key staff leaving*
- *Sales revenue per employee*
- *Percentage of days in a period the IT system recorded a breakdown or had severe issues, etc.*

Question 6
In your opinion, how often do you think the reports on the profitability of the company's products, branches and the company as a whole, should be made available for managerial consideration, and what are the reasons for your opinion?

Question 7
How relevant do you consider the budgeting system in the following managerial functions of the company?

- *Feedback and feed-forward control function*
- *Definition of future action plans which has their associated risk implications, thus providing the framework or the basis for the identification and consideration of risks associated with the objectives of the company*
- *Risk exposure control mechanism – through adjustments or changes of the budgets estimates or variables*

Question 8
[I] How effective is the product pricing to the ability of the company to maintain its competitive advantage? [B] What is your opinion regarding supporting pricing decisions with timely and properly calculated product costs. [II] Discuss any complexity associated with your product cost calculations.

Question 9
Cost-volume-profit analysis for major products - Do you think it is important for the company to apply CVP analysis in estimating the break-even and target profit sales volumes as [A] the indicators of the likelihood of achieving the desired level of profitability and [B] sensitivity analysis of adjustments or changes in cost estimates?

INTERVIEW D QUESTION AND DISCUSSION LIST

Question 1 (I)
How do you assess the company's strategic positioning in relation to the following three typical strategies: cost leadership, differentiation and a focusing strategy?

Question 1 (II)
What of product differentiation, especially through quality?

Question 1 (III)
What of focussing on a particular customer or market segments where you discover opportunities to excel?

Question 2
How relevant do you consider the following measures in aligning the activities of the employees with the company's strategy?
Employee satisfaction survey ratings, Annual percentage of key staff leaving, Sales revenue per employee, Number of suggested improvements per employee, Number of suggestions implemented per employee, Percentage of employees with personal goals aligned to the company's strategy, Percentage of employees who achieve personal goals

Question 3
How relevant will you rate the consideration of the following measures in achieving a more efficient process that supports the company's strategy and increase the likelihood of its success?

Question 3 (I)
Measures relating to the effectiveness of the information system
- *Percentage of days in a period the IT system recorded a breakdown or had severe issues*
- *Percentage of transactions recorded on real time or same day basis*
- *Number of customer statements manually prepared or manually adjusted in a period*
- *Percentage of inventory items with variances arising from human or system errors*

Question 3 (II)
Measures relating to efficient production process and product performance
- *Percentage of sales from new products or new product models*
- *New product/models introductions versus competitors*
- *Percentage of sales from new market or new customer segments*
- *Development cycle time (time to the market)*
- *Unit cost trends*
- *Percentage of defective output*

INTERVIEW D QUESTION AND DISCUSSION LIST

Question 4

No matter how intact and satisfactory the company's relationship with the customers is, there is always the possibility of losing their patronage either in part or in full. Therefore, to increase customer profitability and maintain a strong market position, the company must always apply appropriate mechanisms to identify these possibilities, in order to initiate informed mitigating actions.

In your opinion, how relevant is the CONSIDERATION of the following measures (or how relevant could they be) to the company in monitoring the prospects of customers' patronage and profitability?

Percentage growth in business from existing customers, Total sales to new customers, Customer survey satisfaction ratings, Customer profitability analysis, Percentage returns from customers, Price relative to competitors...

Question 5

In your opinion, how often do you think the reports on the profitability of the company's products, branches and the company as a whole, should be made available for managerial consideration, and what are the reasons for your opinion?