

## RISK MANAGEMENT IN MANUFACTURING SMES IN SOUTH AFRICA

BERNADETTE P. SUNJKA

University of the Witwatersrand, School of Mechanical, Industrial and Aeronautical Engineering, South Africa  
[Bernadette.sunjka@wits.ac.za](mailto:Bernadette.sunjka@wits.ac.za) (Corresponding)

BRUNO EMWANU

University of the Witwatersrand, School of Mechanical, Industrial and Aeronautical Engineering, South Africa  
[Bruno.emwanu@wits.ac.za](mailto:Bruno.emwanu@wits.ac.za)

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### ABSTRACT

Risk Management (RM) in Manufacturing Small and Medium Enterprises (mSMEs) has received limited attention in academic literature and has been viewed as a deficiency in these organisations.

SME's are often the source of innovation, producing customised products in niche markets in a flexible manner and are hence important for the sustainable development of emerging economies. SME's, however, may be less sustainable and less competitive than large firms because they have limited management and business expertise, lack adequate financing and are subject to cumbersome regulatory and bureaucratic requirements. Additionally, continuously changing and rapidly evolving political, economic and social environments in general, supply chain disruptions that are unplanned or business environmental disruptions, such as, transportation delays and port stoppages due to strikes or accidents, supplier incapacitation due to fires or earth quakes or floods may contribute to their perceived vulnerability. Thus, to be sustainable and remain competitive, SME's while vulnerable to risks, need to manage these risks.

The premise of the study is that the risk management strategies applied by SMEs are innovative and, thus, can provide valuable insights. The research aims to discover more about the risk management practices that have been developed by SMEs that have survived through and continue to operate despite the challenges they face on a daily basis.

This paper explores the nature of Risk Management in four well-established (+10years in operation) mSMEs in the Steel and Engineering Industrial sector. A case study approach is employed where semi-structured interviews with the owner-managers, survey results and walk-through observations of the mSME manufacturing facilities are utilised to generate qualitative data. Data is analysed through content coding and analysis.

The findings, although limited to only 4 SMEs, are that external risks in the form of regulatory requirements, lack of skills and labour unrest feature most dominantly among the owner-managers. The demand side of the Supply Chain is more risky than the supply side, while the internal environment of the firm does not pose significant risks. Two key practices across the firms were identified as dominant risk mitigating modes of operation. These are the "Building of Relationships" and "Business Continuity". Risk perceptions differed across the owner-managers, but all agreed that their decision-making regarding risk was influenced by their knowledge and experience.

**Key words:** Risk Management, Manufacturing, SMEs, Owner-managers

## INTRODUCTION

The recent strike action in the platinum mining sector (January – June 2014) and the steel and engineering manufacturing sector (July 2014) has predictably had a significant effect on the South African economy, particularly the metals manufacturing sector. According to Stats SA (2014a), there was a decrease of 1.3% in manufacturing production in Quarter 3 of 2014 compared Q2 2014. Negative growth rates over this period were reported by five of the ten manufacturing categories. The basic iron and steel, non-ferrous metal products, metal products and machinery category were the most significant contributors to the decrease (-6.1% and contributing -1.2 percentage points).

The Platinum sector labour strike lasted 5 months, starting on 23 January 2014 and ending on 24 June 2014 when an agreement was reached between the Association of Mineworkers and Construction Union (AMCU) and the main platinum producers regarding wages and conditions of service (Bohlmann *et al*, 2014). These producers reported that the strike affected half of the global platinum supply where the loss in revenue was approximately R23 billion by employers and R10.7 billion by employees (Bohlmann *et al*, 2014).

According to Business Partners Limited (2014),

"The strike on the country's platinum mines had a knock-on effect on business, both on the platinum belt and elsewhere, as well as in sectors which supply to or feed from platinum mining activity. Smaller businesses, even those that do not have direct dealings with the platinum mines – but which are located in the platinum belt or are suppliers to mining-related businesses – were adversely affected by the strike. The strike underlined the important role which mining still plays in the South African economy and its (the strike's) prolonged nature has significantly contributed to the lowering of economic growth forecast for 2014 by the World Bank. Small business owners' confidence levels declined or, at best, remained static during the 1st quarter of 2014." (Nazeem Martin, MD Business Partners Limited)

The month-long strike in the metals and engineering sector by NUMSA began on 1 July 2014 and continued until 28 July 2014 (Steyn, 2014) was associated with various violent attacks on businesses and the intimidation of non-striking metal-workers, mainly in Gauteng's industrial areas (Whittles, 2014). As a result, some small businesses in the metal industry were at risk of closing down (Nicolaides and Ngobeni, 2014). Several other industries were also severely impacted by the shortage of raw materials, including industries "upstream and downstream" of the steel industry. The strike cost the industry over R300 million (fin24, 2014).

Despite these severe pressures and others placed on manufacturing SMEs in the Platinum Mining Sector and the Steel and Engineering sector, many of these businesses continue to operate, having weathered these economic storms, and many others through their existences. There seems to be a tendency in the literature to criticise the Risk Management Capability of SMEs (Blanc Alquier and Lagasse Tignol, 2006; Gao *et al.*, 2011), but if certain SMEs have survived through numerous severe crises, then this research proposes that there must be some evidence of RM capability in these SMEs.

The premise of the study is that the risk management strategies applied by SMEs are innovative and, thus, can provide valuable insights. The research aims to discover more about the risk management

practices that have been developed by SMEs that have survived through and continue to operate despite the challenges they face on a daily basis.

This purpose of this paper is to explore the nature of Risk Management in four well-established (+10years in operation) mSMEs in the Steel and Engineering Industrial sector in South Africa. This is accomplished through the development of a conceptual framework, from the literature, for Risk Management in SMEs. Qualitative data is gathered through an on-line survey and semi-structured interviews, formulated from the conceptual framework, with the owner-managers of the mSMEs. This data is analysed through the lens of the risk perceptions of the owner-manager, to establish, the risk propensity of the owner-manager, and his/her perceptions of risks in the mSME, and to, then, identify practices utilised to manage these risks.

### DEFINITION OF SMES

A small business or SME is independently owned, operated and financed, where one or very few people manage the business without a formalised management structure, and does not form part of a large enterprise. It has a relatively small share of the marketplace or relatively little impact on the sector/industry in which it operates. This highlights the primacy and centrality of the owner and manager in the operations and decision-making of the SME.

The National Small Business Amendment Act No.29 (2003) provides quantitative criteria for the classification of Small businesses.

*Table 1: Classification of manufacturing SMEs (National Small Business Amendment Act No.29, 2003)*

Sector or sub-sector in accordance with the Standard Industrial Classification	Size of Class	Total Full-time Equivalent (FTE) of paid employees	Total Turnover	Total Gross Asset Value (fixed property excluded)
		<i>Less than</i>	<i>Less than</i>	<i>Less than</i>
Manufacturing	Medium	200	R 51 mill	R 19 mill
	Small	50	R 13 mill	R 5 mill
	Very Small	20	R 5 mill	R 2 mill
	Micro	5	R 0.2 mill	R 0.1 mill

These quantitative criteria have been subject to criticism because (Nieman, 2006):

- i. there is no single criterion specifying “smallness”, but three different specifiers (Columns 1, 2 and 3) where the Act does not clarify whether only one or all criteria need to be fulfilled to classify class.
- ii. comparative analysis over time is difficult based on the monetary criteria, as indices need to be developed to account for price changes (inflation).

For the purpose of this research a Small Enterprise will incorporate the Medium and Small Classes in the manufacturing sector in the Schedule of the Act. These will be identified through the number of Total Full-time Equivalent (FTE) paid employees. Of particular interest for this paper is the notion of a single (or very few people) manager/owner where the business is without a formalised management structure.

## STEEL AND ENGINEERING MANUFACTURING SECTOR

Manufacturing may be described as a process involving tools and labour to produce goods for use or sale as intermediaries, or as final products, either domestically or internationally. The term refers to a range of human activity (labour, entrepreneurship and innovation), combined with tools or capital equipment in a production process in which raw or intermediate products are used to produce final (or intermediate) goods.

The standard industrial classification (SIC) system classifies manufacturing activities within the following subdivisions or categories (Stats SA, 2014a),

- i. Food and beverages.
- ii. Textiles, clothing, leather and footwear.
- iii. Wood and wood products, paper, publishing and printing.
- iv. Petroleum, chemical products, rubber and plastic products.
- v. Glass and non-metallic mineral products.
- vi. Basic iron and steel, non-ferrous metal products, metal products and machinery.
- vii. Electrical machinery.
- viii. Radio, television and communication apparatus and professional equipment.
- ix. Motor vehicles, parts and accessories and other transport equipment.
- x. Furniture and other manufacturing division.

Fig 1 shows that the manufacturing sector contributed 14% of real value added to the GDP for the year 2012 (the latest figures available for Stats SA).

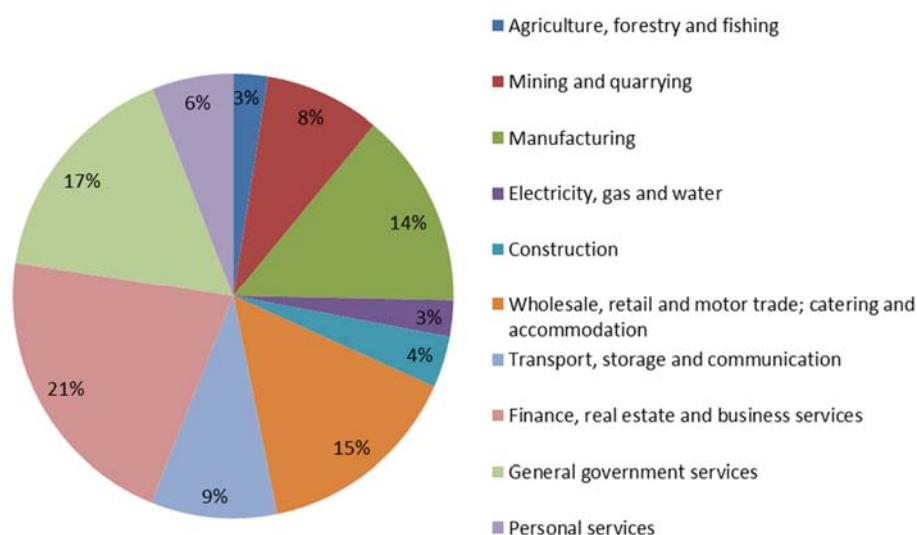
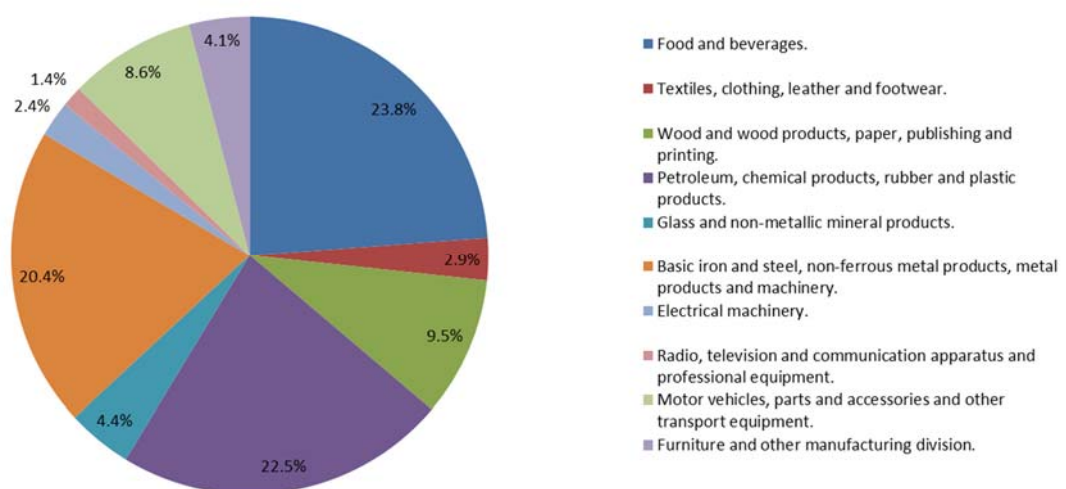


Fig 1: The relative size of each industry sector for the year 2013 (compiled from StatsSA, 2014b)

The SA manufacturing sector was severely impacted by the international financial crisis (2008-2009). The sector contracted by 10.4% in 2009, losing almost R31 billion in GDP contributions (measured in 2005 constant prices, or 3% and R10.3 billion at current prices. The manufacturing sector also lost more than 200 000 job opportunities during the crisis (including formal and informal opportunities) (Stats SA, 2014a).

According to the latest GDP figures released by Stats SA (November 2014), economic activity in the manufacturing industry revealed growth of -3.4%, due to lower production in basic iron and steel, non-ferrous metal products, metal products and machinery; petroleum, chemical products, rubber and plastic products; and wood and wood products, paper, publishing and printing divisions (StatsSA, 2014b). Although, not stated by the report, the labour unrest in the Platinum Mining and Steel and Machinery sectors may well have contributed to this contraction in production outputs.



*Fig 2: The relative importance, based on value added, of each major group within the manufacturing sector (compiled from StatsSA 2014b)*

The Gauteng region dominates the South African economy adding 40.8% of the value in the manufacturing sector (StatsSA 2014b). The basic iron and steel, non-ferrous metal products, metal products and machinery group is the third largest (20.4%) in the manufacturing sector (Fig 2) with an approximate 3% contribution to GDP. This group, located in Gauteng, is the focus of this research.

The largest employer federation that represents companies in the metal and engineering industry is The Steel and Engineering Industries Federation of South Africa (SEIFSA, 2014). At an industry level, this body negotiates collective agreements covering wages and conditions of employment with the trade unions, such as, The National Union of Metal Workers of South Africa (NUMSA, 2014), the biggest metal workers trade union (NUMSA, 2014). SEIFSA is the umbrella body for 27 independent employer associations representing the various sectors constituting the metal and engineering industry. These Associations currently have a combined membership of 2 200 companies employing over 220 000 hourly-paid workers. Companies range from giant steelmaking corporations to micro-enterprises. Of these companies, 62% are small businesses employing less than 50 people. The SEIFSA membership employs 51% of the industry's workforce, and over 78% of all employees

represented by the employer organisations are party to the Metal and Engineering Industries' Bargaining Council (SEIFSA, 2014).

## RISK MANAGEMENT

Several definitions of "risk" exist depending on its context. Harland *et al.* (2003), define risk as "a chance of danger, damage, loss, injury or any other undesired consequences". Jüttner (2003) refers to risk as a "variation" and also a "disruption". The Project Management Body of Knowledge (PMI, 2004) considers risk to be an uncertainty that may have positive or negative effects. This is embodied in the new ISO 31000 family of standards for Risk Management (ISO 31000:2009). Risk is conceptualised as "the effect of uncertainty on objectives", thus allowing the word "risk" to refer to positive possibilities as well as negative ones. This definition is a progression from the former notion of risk as "the chance or probability of a loss". The former definition has spawned the treatment of risk, by many disciplines (engineering, science, medicine, economics and finance) that use risk analysis as an integral part of their processes, through similar formal models based on objective assessments of probability, and the minimization of negative impact (Hansson, 1993). Thus, risk is sometimes reduced to the formula:

$$\text{Risk} = \text{Probability of an event} \times \text{Impact of an event}$$

Not all situations can, however, be adequately modelled in this way, particularly, where knowledge of the situation is so incomplete that no meaningful probabilities can be estimated (Hansson, 2012). In addition, gathering the required information can be time-consuming and expensive, requiring risk knowledge, skills, data and resources which tend to be deficient in SMEs (Henschel, 2008).

The process of "understanding the risks and minimising their impact" (Faisal *et al.*, 2006) is known as Risk Management (RM). Various frameworks exist to assist in managing risks in different situations, for example, Enterprise Risk Management, Operational Risk Management, Corporate Governance and Risk Management, Financial RM. These formal, documented frameworks all propose a similar process (PMBOK, 2004; INCOSE, 2000; ISO 31000, 2009) for Risk Management:

- i. Risk Management Planning
- ii. Risk Identification
- iii. Risk Analysis (often using the above formula)
- iv. Risk Response/Handling
- v. Risk Monitoring and Control

Where, risk responses can generally be categorised as one of the following:

- i. Risk avoidance: risk is eliminated altogether.
- ii. Risk transference: liability for the risk is transferred to a third party.
- iii. Risk mitigation: the probability or impact of the risk is reduced.
- iv. Risk acceptance: the likelihood and/or severity associated with the risk is low enough that no action is taken.

These formal RM approaches are largely designed specifically for large organizations and are too complicated and costly for SMEs to implement (Gao *et al.*, 2011). Considering the limited resources

of SMEs (Sullivan-Taylor and Branicki, 2006; Gunasekaran et al., 2011), it does not seem feasible that formal specialized risk management processes would be utilized. Henschel (2008) found that, in German SMEs, risk management is executed in a rudimentary manner, with a lack of development of the link between their risk management and business planning. Results of this and similar studies may contribute to the perception that SMEs have acute shortages of Risk Management knowledge and skills, and ultimately RM capability (Blanc Alquier and Lagasse Tignol, 2006; Gao et al., 2011).

Corvellec (2009), however, proposes that organisational risk management can be implicit. In other words, risk management can be embedded in the daily management activities that typify the operational mode of the firm without explicitly referring to risk, but still addressing in a complete and effective manner the risk issues of the organisation. Corvellec (2009) concludes that “silence does not necessarily mean the absence of risk management” (p 300 ). Corroborating this approach to risk management in SMEs, Poba-Nzaou and Raymond (2011) find that SMEs tend to manage risk by using a “reactive, informal or apparently unstructured, intuitive and incremental approach” when compared to large organisations. They continue to state that “...rather than there being one ‘ideal’ risk management profile, different internally-consistent configurations of principles, policies and practices can be equally effective in minimizing ... risk “ (p 185). This may be interpreted as demonstrating risk management capability. A limited number of papers could be located on risk management practices (informal risk management) in SMEs (Poba-Nzaou and Raymond, 2011; Henschel, 2008).

Numerous other studies on Risk Management in SMEs in various different contexts using an array of different approaches were identified in the extant literature. This body of literature broadly explores the following themes:

- i. The role of the owner-manager in the management of risk in the firm,
  - a. The centrality of the leadership, decision-making and experience of the owner-manager in the management of the firm (Simmons et al., 2008; Watson and Robinson, 2003; Nunes et al. 2012)
  - b. The “subjective risk” of the owner-manager where the inherent characteristics and ability (Simmon et al. 2008), beliefs and attitudes (Sparrow and Bentley, 2000), risk perceptions of owner/manager and level of personal investment in the firm (Gilmore et al, 2004) play a role in how risk in the business is perceived and managed.
- ii. The nature of risk in SMEs, where there appears to be no particular notion of risk and risk is seen to have a variety of different meanings,
  - a. variability in possible outcomes, where entrepreneurs are prepared to accept the possibility of significant losses, if the possibility of gains is equally significant (Forlani and Mullins 2000)
  - b. the standard deviation in profit as the variability (risk) measure (Watson and Robinson 2003)
  - c. uncertainty, defined as “as any unpredictable event that disturbs the production process in a manufacturing system” (Koh and Saad 2006)
  - d. discontinuity in operations (Sullivan-Taylor and Branicki 2011)

- iii. The different risk contexts and complex risk environment in which SMEs operate, where SMEs may singularly or collectively face the following risks
  - a. *External Risks* such as economic and environmental turbulence (Kraus et al., 2012; Ma and Lin, 2010; Sauer-Leroy, 2004); foreign competition (Gunasekaran et al., 2011); natural disasters (Wedawatta and Ingirige, 2012); Local and international regulatory environment (Tang and Tang, 2012); new technology (Faisal et al., 2006)
  - b. *Supply Chain Risks* in the form of information risks (Faisal et al., 2006), loss of continuity in business (Sullivan-Taylor and Branicki, 2006), supply chain integration (Gunasekaran et al., 2011)
  - c. *Internal Risks* such as access to and the cost of finance (Nunes et al., 2011); McConaughy et al., 2001; Altman and Sabato, 2001; Antonites and Wordsworth, 2009; Gilmore et al., 2004); Health and Safety in the form of workplace accidents (Jørgensen et al., 2010); Human resource development and knowledge management (Gunasekaran et al., 2011); Research and Development investment (Nunes et al., 2012)

No research literature could be located of Risk Management in South African SMEs.

There is, thus, a lack of coherence and understanding in the literature of risk management in SMEs in general. This, then, presents a gap in the study of Risk management in SMEs. This study proposes to contribute to closing this gap. To this end, a conceptual framework is developed from the literature, to focus the investigation on the informal practice of risk management in SMEs.

### **CONCEPTUAL FRAMEWORK**

The conceptual framework (Fig 3) developed from the literature takes into consideration the pivotal role of the owner-manager in the SME. Through his/her knowledge, experience and daily activities he/she will scan, identify and assimilate information from the external environment, the customer/supplier environment of the Supply Chain and the company's internal environment to make decisions regarding potential risk events that may impact the company. The personal characteristics of the owner-manager influence the translation of this information into risk management practices in the firm.

The term 'practice' has often been seen to be equivalent with 'routine', or 'what people really do' (Gherardi, 2009). Schön (1983) explains that 'practice' may refer to 'performance in a range of professional situations' and to 'an element of repetition'. Practices, thus, refer to a range of human activities in which managers are involved in the exercise of their daily professional activities (Schatzki, 2001). Corvellec (2009) finds that practices are a result of a continuous process of learning that is influenced by external factors. They are an accumulation, without an a priori design, of heuristic rules that have been formalised in the firm and become intrinsic to the operational model of the company i.e. they emerge from the everyday managerial tactics. These practices may be evaluated and interpreted as Risk Management Capability (RMC).



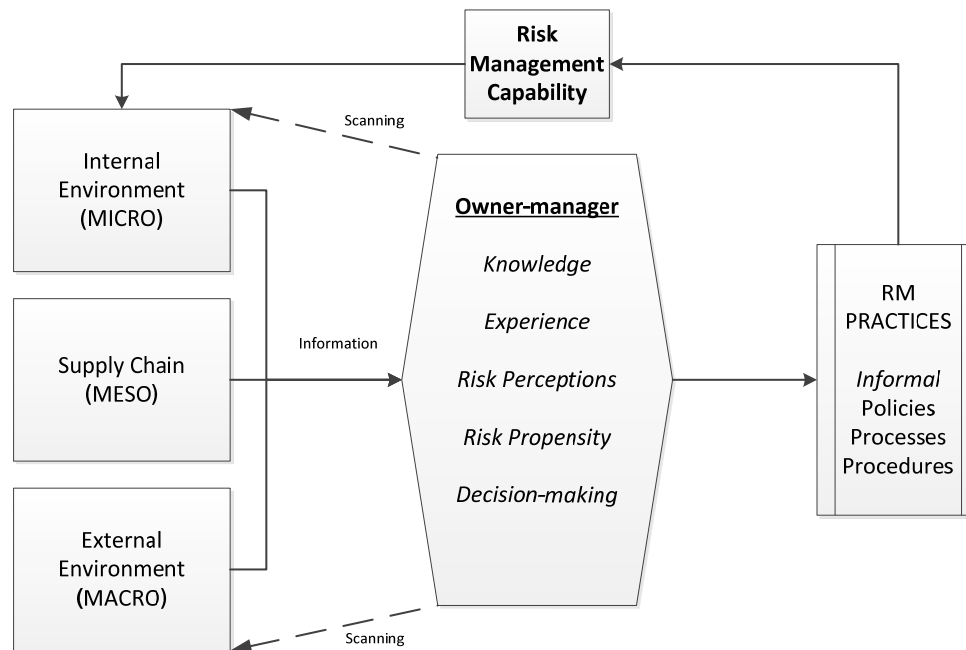


Figure 3: Conceptual Framework for Risk Management in SMEs(developed by authors)

A capability is defined as the ability or power to do something (Soanes *et al.*, 2001). Risk Management Capability has been assessed through RMC Maturity Models tracing back to the literature on quality management (Cienfuegos, 2013). The objective of maturity models is to measure the level of sophistication of organizational processes and facilitate the implementation of best practices. The most widely utilised framework applying the maturity method to risk management was proposed by Hillson (1997) (Cienfuegos, 2013). This model proposes four maturity levels (naive, novice, normalized, natural), which are measured in terms of four attributes (culture, process, experience and application) (Ren and Yeo, 2004). Cienfuegos (2013), however, points out that most of the models refer to a formal approach to risk management or the improvement of existing approaches, are diagnostic tools and are often representative of the large project and IT-oriented firms. It does not, thus, seem appropriate to use maturity models to assess RMC in SMEs. For the purpose of this research, Risk Management Capability is, according to Gao *et al* (2011), the creation and enhancement of the ability to develop and implement related strategies, techniques and systems in RM and to share and transfer RM practice.

## RESEARCH METHOD

A multiple case study design was used. Case studies address “How” and “Why” questions regarding some real-life phenomenon (Yin, 2009). This study seeks to determine **how** manufacturing SMEs manage risk, the real-life phenomenon. A multiple case design uses replication logic analogous with that used in multiple experiments (Yin, 2009). Replication may either be literal where similar results are predicted across the multiple cases or theoretical where contrasting results are expected. The development of a rich theoretical framework, stating the conditions under which the particular phenomenon (informal risk management practices) are likely to be found (literal replication) as well as the conditions when it is not likely to be found (theoretical replication) is important. This framework eventually allows for “analytic generalisation” where the framework is used as a template against which to compare the empirical results. If two or more cases are shown to support

the theory, the replication can be claimed (Yin, 2009). This addresses external validity. This study predicts literal replication across the multiple case studies selected. Reliability is ensured through detailed documenting of the case study protocol and auditable procedures (Yin, 2009).

The unit of analysis is the SME. The primary source of evidence was the owner-manager (OM) of the SME because of his/her central role in the daily management of the SME and the predicted filter for information and decision-making in the theoretical framework. Information was collected via the survey responses and semi-structured interviews and with the owner-manager. Interview questions were developed using Wengraf's(2001) CRQ-TQ-IQ Pyramid Model, where CRQ = Critical Research Question, TQ = Theory Questions and IQ = Interview Questions. An extract from the pyramid model developed for this research is presented in Fig 4. The CRQ and TQ's are formulated in the theory-language of the particular field of study, that is, the Theoretical or Conceptual Framework. The IQs are developed in the language of the interviewee i.e. in more colloquial language (Wengraf, 2001).

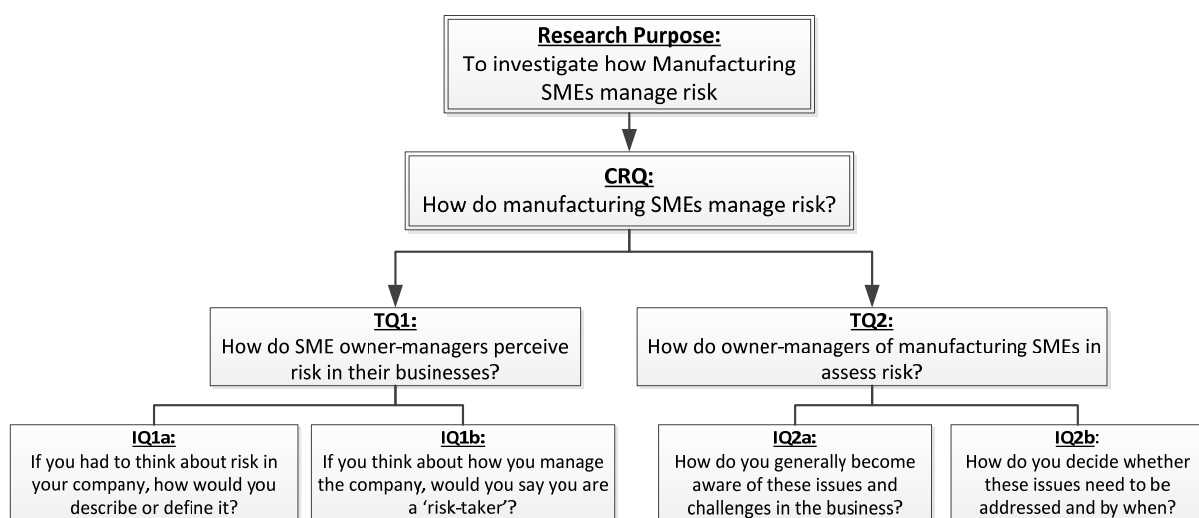


Figure 4: CRQ-TQ-IQ: Pyramid Model (based on Wengraf, 2001)

Case are not “sampling units”, and statistical sampling methods are inappropriate (Yin, 2009). Cases in this study are selected based on criteria specified in the research design according to the following:

- i. Independently owned, operated and financed, where one or very few people manage the business without a formalised management structure, and does not form part of a large enterprise,
- ii. Have a relatively small share of the marketplace or relatively little impact on the sector/industry in which it operates.
- iii. Are well established, having been in operation for more than 10 years (40% of new businesses in South Africa fail within their first year of operation, 60% by their second year and 90% within the first 10 years (DTI, 2008))
- iv. Are part of the Steel and Engineering Manufacturing sector (one of the largest manufacturing sectors)
- v. Are Small or Medium in size according to the Small Business Act of South Africa

Companies were located through a survey on Risk Management in SMEs. SEIFSA agreed to distribute the survey via email to their SME database. 46 complete responses were received of which 22 indicated that they would be prepared to participate in follow-up interviews. On investigation not all 22 respondents satisfied the criteria above, and were removed from the potential cases. For the purpose of this paper, 4 cases were selected based on particular responses to questions in the survey (Table 2), the field work was conducted and analysed using the Conceptual Framework in Fig 3. In adherence with the ethical requirements for this research the identities of the companies and the owner-managers are protected through the use of pseudonyms.

*Table 2: Case Company Profiles*

Company	Owner-manager	No. of FTE employees	Company Size (based on the Act)	No. Years Company has been operating	Location	% shares held by General Manager	Number of Shareholders
Valve Co 1	OMVC1	20-49	Small	> 20 Yrs.	Gauteng	<50%	3
Valve Co 2	OMVC2	50-199	Medium	> 20 Yrs.	Gauteng	<50%	3
Trans Co	OMTC	50-199	Medium	> 20 Yrs.	Gauteng	75%+	1
Pump Co	OMPC	20-49	Small	> 20 Yrs.	Gauteng	75%+	1

Thematic Content Analysis (TCA) was employed as the analytical technique to map the empirical field data to the conceptual framework. This technique requires complex iterative movement between the data and the concepts, between description and interpretation, using inductive and deductive reasoning (Merriam, 1998). Conceptual links between categories and properties are made by using categories (themes), properties and hypotheses in this constant comparative method. The method is used to analyse data by assigning codes that reflect various categories and properties to units of data by arranging them in groups of similar substance and meaning (Merriam, 1998).

## RESULTS

### Characteristics of Companies and Owner-Managers

All four companies have been trading for more than 20 years and have been managed by the current owner-manager for more than 10 years. They all have ISO 9001 certification. The products manufactured by the 4 companies are summarised in Table 3.

The owner-managers interviewed are all over the age of 50 years with more than 15 years of small business management experience. All 4 owner-managers have tertiary education qualifications with 3 having BSc Eng degrees and one with legal and marketing qualifications. OMVC2 and OMPC consider themselves to be entrepreneurs and risk-takers. OMVC1 does not consider himself to be either of the two and OMTC is not sure whether he is an entrepreneur but does consider himself to be a risk-taker. When questioned in more detail about their risk-taking propensity, they all clarified that they take calculated risks based on their knowledge and experience. They all believe that their own judgement based on their experience plays an important role in decision-making in the business.

Table 3: Case Company Products

Company	Products
Valve Co 1	Butterfly and tilting disk check valves for extreme pressure and temperature applications ideally suited for the water, oil, process, mining, power generation, petrochemical, gas, sugar and steel industries
Valve Co 2	Globe Control Valves; Positioners; De-superheaters; Hygienic Valves; Dosing Control Valves; Pneumatic Rotary Actuators; Pneumatic Linear Actuators
Trans Co	Railway Air and Vacuum Brake Equipment; Handbrakes; Snubbers; Draw gears and couplers, including for East Africa; Pressure Vessels manufactured to ASME standards; Various other Railway items
Pump Co	Manufacture and distribution of VersaFlo Range of submersible and vertical spindle pumps for the mining Industry; machining and component-manufacture for OEM's in the Mining, Motor and Defence industry

Their definitions of risk varied when given the following choice:

- i. As UNCERTAINTY, about an event/potential loss/a decision
- ii. As VARIABILITY, in profit/sales/supply/demand
- iii. As a potential HAZARDOUS event
- iv. As LOSS, of profit/sales/income/customers/suppliers
- v. As a disruption in business continuity

Two of the OMs chose (iv) while each of the others chose, (i) and (ii). The two Valve Manufacturing OMs indicated that they have a formal risk management strategy and/or processes and procedures in place in the form of various systems such as ISO9001, ISO14001 and the SHEQ Management System. They both believe that risk is well managed in their companies and that they have the resources (e.g. information, knowledge, technology) they need to make good business decisions regarding risk. One of these OMs indicated that this was because the *“Business has been successful even in recession times”*. The other two OMs did not believe that they have formal RM in place, despite having implemented similar systems to the other two firms. They do not believe that risk in their firms is well-managed, one stating that *“So much of the uncertainty is beyond our control”*. One is not sure whether he has the necessary resources available to make good risk related decisions, while the other states that, *“We certainly have the resources to manage the controllable risk but not the risk arising out of the broader socio-economic environment, BBBEE in particular”*. This seemingly demonstrates varying risk perceptions, but an overall risk awareness among the OMs.

### Risks experienced by the Case Companies

External risks which may affect the organisation, such as changes in the environment in which the company operates, were indicated by the owner-managers as a high risk in 3 out of the 4 firms. For the 4<sup>th</sup> firm (OMVC2), external risks were indicated as medium. When this type of risk was probed in more detail with the owner-manager in the interviews, common themes, across all 4 firms, emerged (indicated in Table 4).

Table 4: External Risks

Risk	Description
<p>Changing regulatory targets</p> <p>i. BEE and Skills Development</p> <p>ii. Labour Requirements</p> <p>iii. Local Content Requirements and Sector Designation</p>	<p>i. BEE legislation is changing in 2015 where level requirements have become more stringent -requires more effort and initiatives to secure points <i>"what keeps you awake at night? And I said only one thing and that's BEE"</i> (OMTC)</p> <p>Skills development expenditure as a proportion of total payroll has gone up from 3% to 6% - how to spend this?</p> <p>ii. Private sector is being asked to create jobs, but wage requirements are high, skills are not available, unionised labour is unstable <i>"our biggest risk, the labour"</i> (OMVC2)</p> <p>iii. Parastatals form a large part of the customer base (&gt;50%) and are now requiring up to 70 % local content in the products from their suppliers.</p> <p>Certain sectors have also been designated as preferential suppliers to increase local content e.g. Valve Manufacturers – <i>"we were designated at the 3rd of March and 6 months down the line there's been no increase in business, in fact, it's dropped"</i> (OMVC1) because their customers need to make changes on their side <i>"a risk for the whole industry"</i> and resistance from the Valve Buyers because they do not want to change.</p>
<p>Labour Unrest</p>	<p>i. Platinum Sector strike impacted as the mines are a key customer resulting in loss of business, <i>"So getting back to it apart from the market forces... its always labour related like the platinum mines. The platinum mines are a big customer of ours so just as they came out of their strike we went into our strike so as their business is picking up ...you know we struggling with that again."</i>(OMPC)</p> <p>ii. NUMSA strike forced the companies to shut down for periods of time due to violence and intimidation by the strikers, resulting in some orders being delayed, <i>"some of the orders we had to delay. Because we had stuff at heat treatment and we couldn't get it because they were closed"</i> (OMVC2).</p>
<p>Lack of Skills in the market</p>	<p>An aging artisan workforce <i>"the average age of an artisan is about 55"</i> (OMPC) and not enough replacement skills in the market <i>"a major skills shortage ... technical skills ...artisan type skills"</i> (OMPC) and <i>"We not getting youngsters coming in"</i> (OMVC1)</p>

Risk in the Supply Chains seemed to be largely perceived to be on the Demand Side. A significant proportion of all the SMEs business is with state-owned enterprises and they cannot predict which tenders they will get, so demand forecasting is a challenge. Cash flow becomes a problem when certain contractors appointed by the Parastatals do not pay on time. *"...cash flow problem. We sitting with ... about R8 million worth of which we sitting waiting for money since December and they can't pay because they don't have the money. But they've been given a big state owned contract which they can't manage because they don't have the skills to manage it. And then we sit in the*

*vulnerable positions*" (OMVC1). *"...I mean if Customer C doesn't pay us then we've got a big problem you know because of the cash flow side of it"* (OMPC). When large corporates are the customer (as is the case with these SMEs), then the OM is dealing with the Buyers and *" a buyer can change at Customer C and now I've got to build up a relationship with the guy again... then the apple carts turned over and you don't know what you getting and things like that"* (OMPC). The fluctuations in the demand of the corporate customer get passed onto the SME, resulting in them having to build up stock during certain times of the year, such, as Christmas.

The Internal Environment does not seem to pose a risk to the OMs, largely because it is wholly under their control.

### **Practices Identified**

The practices that emerged most strongly among the 4 companies as risk mitigators are discussed as follows:

A central practice is the **"Building of Relationships"** across the whole business, that is, with the staff, with suppliers and customers, and with competitors. These relationships engender trust, provide mutual benefits and ultimately contribute to risk mitigation.

The strong relationships with staff were observed in the plant tours given by the OMs. All OMs greeted staff by their first names, and enquired about their hobbies or family members. There is a sense of "family", and often families are employed at one company. There is an understanding of the co-dependency between the company surviving and the staff, and their families, making a living. *"I do pay reasonably, ... and we have a long-standing thing that if anybody wants to do any education, I'll pay for it, ... we lend lots of money, currently it's over 7 million, to the staff for buying houses or vehicles or burying people, educating the kids or whatever they want to do"* (OMTC). This engenders loyalty on both sides. They have high retention rates with long-term service. Their staff is well-trained and skilled. They "know their jobs, they know what they are doing, they don't make mistakes" (OMVC1). This helps to mitigate the risks of scarce skills, and labour unrest.

During the NUMSA strike a few workers were prepared to return to work during unconventional hours and under the protection offered by the OM. This ensured some business continuity, *"we kept the factory closed and we kept a little bit of work going so that we could at least do some kind of invoicing at the end of the month... we just sort of limped through"* (OMVC1); *"I had an agreement with my workers, I went and spoke to them I said look you go out on strike that's fine but when you come back there won't be a Company here"* (OMVC2). **"Transparency"** between the OM's and their staff also emerge as a practice and the understanding of a shared risk of survival. This potentially supported the practice of ensuring **"Business Continuity"**. During the strike those companies that could, operated on skeleton staffing as discussed above. Most of the companies planned for the strike, by completing orders ahead of time, and ordering safety stocks. *"We put in overtime and we made sure we invoiced, May and June ... we got as much as we could out ... so we weren't in a penalty situation. And then we knew that the rest of it that was there was fine, we could just muddle through for the month. So it didn't really affect us. But there were certain companies who didn't listen and they were told to plan ahead and they have taken significant knocks"* (OMVC1).

None of the OMs identified their supply sides as being a risk. This was largely due to the relationships of trust that they had developed with their key suppliers over many years. They know

the key people in their supplier businesses on a personal level: *“we also tend to stay with ... our suppliers. Our nut and bolt supplier has been supplying us for 28 years. .. we had built a relationship that we can get service from them. And if we got a problem with the price we'll tell them we got a problem with the price. But often we have to call in favours ... And then we'll work together to do it... know these people on a personal basis... We tend to try and stick...”* (OMVC2). They will often collaborate with suppliers to get business: *“via another supplier of ours. He said, these guys are looking for this, can you do it? And I said, ja...You know, so it's always people, people are very, very important, it's a network thing”* (OMTC). Similar relationships may develop with some customers but this is not as prevalent, hence the demand side risk mentioned above.

Among the valve manufacturers **“collaboration”** with co-competitors emerged as a formalised practice. The forming of The Valve and Actuator Manufacturers Cluster of South Africa (VAMCOSA), where the valve manufacturers joined forces to work with government agencies to secure the designation of their sector, is an example of competitor collaboration. This is anticipated to provide a boost to the local valve manufacturing market as well as assist in addressing BBBEE requirements, *“...through Vamcosa we have now contacts into the Parastatals that we never had before”* (OMVC2).

The findings, although limited to only 4 SMEs, are that external risks in the form of regulatory requirements, lack of skills and labour unrest feature most dominantly among the owner-managers. The demand side of the Supply Chain is more risky than the supply side, while the internal environment of the firm does not pose significant risks. Key practices across the firms were identified as dominant risk mitigating modes of operation. These are the *“Building of Relationships”*, *“Transparency”*, *“Business Continuity”* and *“Collaboration”*. Risk perceptions differed across the owner-managers, but all agreed that their decision-making regarding risk was influenced by their knowledge and experience.

## **CONCLUSION**

The results of the four cases analysed suggest that these SMEs have RM Capability. Through the building and leveraging of business relationships developed over long periods of time and based on trust, and facilitated by transparency and collaboration, the OMs are able to mobilise resources (human, material or financial) to manage risks in their businesses. This assists in ensuring business continuity that facilitates continued revenue generation.

Replication across cases is demonstrated with common themes emerging that can be mapped to the conceptual framework. This suggests that there is potential generalizability in the findings, and that the framework may contribute to the theory of Risk Management in the context of manufacturing SMEs.

Further empirical work is required in the form of broader analysis of manufacturing SMEs in the Steel and Manufacturing division as well as the other large manufacturing divisions of the manufacturing sector.

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