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RISK MANAGEMENT SYSYTEMS USED IN MANUFACTURING SMALL AND MEDIUM ENTERPRISES IN MASVINGO, ZIMBABWE

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ABSTRACT

Small and Medium Enterprises (SMEs) have been labelled as engines for economic growth the world over. In Zimbabwe however SME development has been hampered by a number of identified causes. Amongst them Mudavanhu et al (2011), Chidoko et al(2011) and Zindiye (2011), in their researches, identified some of the challenges as lack of skills in human resources, poor managerial skills, lack of capital, poor accounting systems, unavailability of credit, import competition, high cost of raw materials. The SMEs have thus failed to satisfy the engine for growth function as was expected by most economists. The current study aimed at finding out if SMEs are doing something about mitigating against the causes of failure and suggest ways that they can adopt to contribute to sustainable development. The descriptive survey design was used to describe the risk management systems in place. The study found out that internal controls such as security guards, generators in place of electric systems and in rare cases insurance are the risk management systems that SMEs rely on mostly. The study recommended entrepreneurial skills education as a pre-requisite for good and improved performance in SMEs. Owners/managers should communicate business objectives to all the employees through training and development, so that they own the objectives and ensure that there is continuity in the operations of the business resulting in minimal or zero losses and sustainable development

KEYWORDS: Entrepreneurship Skills, Smes, Operational Risk Management, Training and Development, Sustainable Development.

1.0 INTRODUCTION

Small and Medium Enterprises (SMEs) have been labelled as engines for economic growth the world over. They contribute to a country's national development through; employment creation, offering advanced and innovative products & services, enhancing international trade

through diversification, sustainable development and creating wealth for the masses [Hussain et al (2011) and Bayaya & Flowerbird (2010)]. Based on the studies by Hussain (2009); in Pakistan SMEs account for more than 95% of the total number of establishments, 80% of employment outside agriculture, and contribute 30% towards the country's GDP, in Bangladesh they contribute 50% of the country's GDP and provide 82% of total industrial sector employment, in Nepal SMEs constitute more than 98% of all establishments and contribute 63% of the value segment. A study by Zindiye (2011) revealed that at least 57% of the productive population are SMEs.

However despite their immense potential and perceived contribution to the national GDP their performance still fall short below their expectation (Arinaitive, 2006). Among the common reasons for SMEs failure are deficiencies or weaknesses of operational risk management structures (Hussain et al, 2011). As such SMEs have failed to satisfy the engine for growth function as was expected by most economists.

Based on the findings of the King III Report of 2009, most SMEs have not shown a great interest in Operational Risk Management (ORM). On the other hand adoption of sound ORM serves as an avenue of improved services & benefits to the SMEs (Curley, 2004). ORM dates back to the 1960s when manufacturing companies started exploring ways to address delivery delays mainly as a result of large volumes of products and services (Bayaya & Flowerbird, 2010). Citing Nicholas & Steyn (2008), Bayaya & Flowerbird noted that the use of ORM flourished in the late 1980s and early 1990s. Presently many firms in the USA, Canada and Europe are employing ORM concepts to aid their financial and trading activities (Bayaya & Flowerbird, 2010). From the King III Report many firms that have adopted sound ORM strategies have realised positive benefits to their businesses.

However, much of the research on ORM have been conducted in developed economies such as the US, UK and Europe. As such, such researches have been limited to Africa, let alone Zimbabwe. Worryingly, no literature is found on ORM adoption in SMEs in Zimbabwe (in particular Masvingo urban). The only researches in SMEs have been focused on causes of their failures. The main reasons as highlighted in Bayaya & Flowerbird for SMEs not to adopt robust ORM strategies are that setup and running costs of implementing ORM can be substantially high and transactions in small businesses lack economies of scale. This necessitated the current study which is aimed at exploring ORM strategies being employed by SMEs in Masvingo urban.

The descriptive survey design was used to describe the risk management systems in place.

1.1 Problem Statement

Manufacturing SMEs in Masvingo are facing Operational Risk Management problems which inhibit them from growing and contributing meaningfully to economic growth and sustainable development.

1.2 Objectives of the Study

The main aim of this study is:

- To find out whether any Operational risk management is practiced by SMEs in Masvingo.
- Explore the major influencing factors of operational risks in SMEs in Masvingo.
- To help SMEs through this study to be worry of events or incidents that occur in their organizations and how they can be reduced and monitored.

1.3 Structure of Thesis

This paper is organised in (five) 5 sections. Section 1 introduces the subject under discussion. It highlights the research purpose, background to the study, the basics of ORM strategies and presents a layout of the entire paper. Section 2 looks at the theoretical and empirical evidence of Operational Risk and Operational Risk Management strategies applicable to SMEs. It also discusses the major causes of Operational Risk, assessment and analysis of Operational Risk in small businesses, benefits of implementing Operational Risk management strategies and the challenges of implementing Operational Risk Management strategies. Section 3 introduces the research methodology, which illustrates how the data was collected for the research. Section 4 contains the results and findings of the study. Lastly, Section 5 makes a conclusion and recommendations based on the research findings.

LITERATURE REVIEW

2.0 Introduction

This section introduces the concept of Operational Risk and Operational Risk Management. It addresses the major causes of Operational Risk, looks at how this risk is analysed and assessed, introduce the concept of Operational Risk Management, its benefits and the challenges faced in implementing Operational Risk Management.

2.1 Definition of Operational Risk and SMEs

Operational risk refers to the chance of loss resulting from “inadequate internal processes, people and systems or from external events” [Hull, 2011; Battacharya, 2012; Blunden, 2011 and Tarantino, 2009]. These authors concur in defining operational risk by quoting the Basel

2 definition: " the risk of losses resulting from inadequate internal processes, people and systems or from external events". Bhattacharya (2012) also expanded the definition and said that operational risk "is the risk of loss arising from various types of technical or human error or failed internal process, legal hurdles, fraud, failure of people and systems and from external agencies". These are losses that are encountered through negligence of the employees and usually the employees are aware of the malpractice. The bank regulators realised that large losses were encountered as a result of incompetence by people, processes and systems.

Operational risk encompasses all the risks of running a business. Operational risk therefore overlaps with other risks. It is however different from other kinds of risks in that it is not transaction based, cannot be identified from accounting information, cannot be traded, its financial impact cannot be limited and the risk cannot be assumed proactively (Jorion, 2003). This is because operational risk is there before a business opens its doors to transact, is not recorded in the ledger unless someone reports it and then it can even be audited. A business cannot put a limit on the level of loss it wants to incur, but can only mitigate through controls but cannot prevent risks from happening.

Operational risk has been a preserve of the financial services sector ever since the Barings Bank February 1995 incident when Leeson confessed that he had made US$1.3million losses due to amassing unreported losses over 2 years. Similar spectacular losses were also experienced at; "the Wall Street Darlings"- Enron and WorldCom, one of the "Big Five" accounting firms - Arthur Anderson and the "rogue trader" – Shame Mandara at NMB. The result of such failures has been the same in most cases – bankruptcy. This alarmed authorities to look into issues bedevilling operational risks faced by banks in particular and other corporations at large. No wonder, the setting up of Basel Accords and recognition of Operational risk as one of the major risks facing financial institutions. It is not only the financial services sector that should manage the losses resulting from failed processes, systems, people or internal controls but all businesses are susceptible to such losses.

Small and Medium Enterprises (SMEs) have been classified differently in different parts of the world. Internationally SMEs are defined using the legal status, level of capital invested, rate of turnover, economic sector and levels of employment. In Zimbabwe SMEs are defined using their autonomy, number of permanent workers, registration, capitalization, turnover and economic sector. The Community of the European Communities (2005) as cited by Henschel et al (2010) classified micro, small and medium enterprises as shown in the table below:

Table 1: Classification of SMEs

Subclass	Number of employees	Annual turnover ($m Euros)	Balance sheet total ($m Euros)
Micro firm	‹10	≤ 2	≤ 2
Small firm	‹ 50	≤ 10	≤ 10
Medium sized firms	‹ 250	≤ 50	≤ 43

In Zimbabwe SMEs are classified according to the sectors or subsectors of the economy. In the manufacturing sector, SMEs refer to organizations that have 5-100 full time employees, a maximum gross turnover of US$500 000 and a maximum gross value of assets of US$2 million (MSME Policy and Strategy framework, 2010).

It is however not the different definitions that are the thrust of this paper but how these important sectors of the economy can be nurtured to remain competitive and contribute to economic growth and development. SMEs have been found in the Asian tigers to be the engines for economic growth. In the Gemini report of 1993 it was reported that the SME sector was the greatest employer and that 48-60% of SMEs close within the first three years. This paper suggests that SMEs fail in the first two years because of poor or inadequate operational risk management structures.

2.2 The causes of Operational Risk

The major causes of operational risk are embedded in the definition of operational risk. A comprehensive breakdown of these factors was made by the British Bankers Association that led to Operation risk. Their classification is presented in the table 2.

Table 2: Classification of Operational Risk Causes

Internal Risks		
People	**Processes**	**Systems**
Employee Collusion/Fraud	Accounting Error	Data quality
Employee Error	Capacity risk	Security Breach
Employee Law	Contract Risk	Strategic Risks
Health & Safety	Reporting Error	System Failure
Industrial Action	Settlement/ Payment Error	System Suitability
Lack of Knowledge/Skills	Transaction Error	
Employee Liability		
External Risks		

External	Physical
Legal	Fire
Outsourcing	Natural Disaster
Political	Physical Security
Regulatory	Terrorism
Tax	Theft

Adapted from: Jorion (2003) pp 538

From the British Bankers Association Survey Operational Risk is mainly caused by people, processes, and systems, external and physical factors as discussed below.

- **People**

The people can lead to losses if they do not act responsibly. Early warning signs in case of people failure are usually seen in the number of mistakes made, the rate of staff turnover, the number of injuries at work, the number of employee complaints and the time taken by employees off work. These signs are usually as a result of poor employment practices and poor workplace safety measures. Other signs of failed people and processes can be in the form of the number of fines for improper practices and the number of returns to the organization.

- **Processes**

If processes fail they will lead to losses. Usually process failure is manifested through business disruption and system failures. Organizations observe these by the number of reports received. The warning signs are usually the number of times the system is down or the time it takes to revive the system. It could also be the number of hacking reports received and their frequency. Another indicator can be the failure to access internet especially where most of the business processes need internet connections. The number of failed trades, settlement delay and errors in transaction processing can also be warning signs of operational risk that need assessment before they cause great losses.

- **Systems**

This risk manifests itself in a number of ways. This can be through poor data quality where the data produced cannot provide any meaningful analysis or comparisons. It can also be through security breaches whereby personnel have access to confidential information of the

company or may release non public information to the public. The systems of communication and data transmission within an organisation may fail leading to operational risk.

- **Internal Controls**

If internal controls are not strictly adhered to, the people and processes can take advantage of the laxity and cause losses. The number and frequency of fraudulent activities reported in an organization can be a warning sign of worse things in the failure of internal controls. Delays in executing some processes can also be a warning sign that things are not normal.

- **External Events**

External events can cause far reaching damages to assets and cause huge losses. When an organization outsources services it has to ensure that the services do not end up being a source of risk. Clients can bring about losses when they claim that the service emanated from the organization when it was fraudulently generated. External events can be in the form of damage to physical assets where natural hazards occur.

A business has to look at the major drivers of operational risks that are key to its operations. These differ from one organization to another.

2.3 Analysing and Assessing Operational Risks in SMEs

Not all factors will be applicable to all businesses. The management of a business need to come up with the risks that greatly affect their operations. This constitutes the analysis of operational risks. SMEs that deal in manufacturing would however face more or less the same types of risks while those in retailing will be exposed to the same kind of risks and so forth.

Tarantino and Cernaliska (2009) came up with what they termed an operational risk management framework for all organizations. In their framework they used the Basel and Solvency approach to operational risks which breaks all operational risks into seven categories: internal fraud, external fraud, employment practices, clients' products and business processes, damage to physical assets, business disruptions and systems failure and execution delivery and process management(Tarantino et al 2009, Balaraman et al 2010). The subcategories will be analysed by ranking them using their financial impact on the objectives of the business, the ability to detect the risk and the likelihood of the risk occurring. A rating scale of 1-5 is used for each and the business prioritizes the risks with a higher risk score. Thus the risk priority number is found by ranking risk after multiplying the three factors;

$$\textit{Risk Priority Number} = \textit{Severity} * \textit{Likelihood} * \textit{Detectibility} \quad \ldots\ldots\ldots 1$$

A higher priority will be given to those risk categories that give a higher risk priority number or score. Severity refers to the worst possible outcome for each evaluated failure. If the worst

happens how severe will be the loss as a result of the operational risk. Likelihood measures the probability of the event occurring in a given period of time. Detectibility measures how likely the risk can be discovered before it happens.

Balaraman et al (2010) indicated that assessment of risks would be best with the liberal use of statistical methods but in most cases these will not be available. He therefore recommended "calibrated or educated guesses' on the probability of occurrence and the severity to be able to come up with a risk management policy.

Israel (2008) identified the Friedman Two-Way ANOVA for analysing ordinal scaled responses given to several attributes or elements by a number of individuals or respondents. It tests the consistency in ranking patterns across attributes. Any sample size can be used and there is no need to assume normality of populations from which samples are drawn.

The formula is given as:

$$\chi^2 = \frac{12}{Nk(k+1)} \sum_{i}^{j} R_j^2 - 3N(k+1)$$

Where N=the number of blocks; rows

K =number of treatments; columns

R = sum of the ranks in the jth treatment group

The analysis of risks done by SMEs is similar to that done by any other business. First the SME lists the risks that affect their operations and then establish the impact and likelihood on each of the identified risk. Normally it is classified into low, high and moderate. Numerical values can be placed on the low, high and moderate so that it is easy to compare and make decisions. If for example the risk of loss caused poor staff communication is high on impact and high on likelihood then it means the risk is a high risk factor. Suppose the numerical value is 5 on high it means the total risk score will be 25 for poor staff communication (Severity x likelihood). The identified risks with the highest risk score constitute the Key risk indicators for the SME. In this study detectibility will not be emphasized as the study is the first of its kind and SMEs may not have the experience of detecting the risks.

2.4 Operational Risk Management

Segal (2011) defined operational risk management as "a category of risks related to unexpected changes in elements related to operations such as human resources, technology, processes and disasters". In all definitions authorities agree that some loss will have been experienced or will be experienced and caused by the people, the processes, the technology and nature.

The management of the identified key risk factors in SMEs will be different from that in the financial services sector and large organizations where risk management committees are formed to study the key risk factors and monitor them. In the financial services sector the Basel 11 Framework require financial institutions especially banks to calculate the capital charge for operational risk depending on their level of exposure and keep the reserve. The second pillar of the Basel framework concentrates on supervisory role. The financial institutions are then supervised by monetary authorities to ensure that they comply with the minimum capital requirement and also with the third pillar on disclosure and market discipline.

In large organizations risk management can be a functional area on its own with an Operational risk Manager or officer who is responsible for identifying, assessing, analysing and managing operational risks. In SMEs it is the owner or manager in most cases who has to grapple with the challenges of the risk management function. It is even worse in the Micro and Small Enterprises where there are multiple roles on the owner or manager. Operational risk management has therefore not been given much attention in the SMEs although operational risks are also partly responsible for the collapse of SMEs in Masvingo.

2.5 Benefits of Operational risk management

Segal (2011) proposed a number of benefits which organizations will reap if they engage in operational risk management. Firstly an organization is expected to experience a reduction in operational losses if it embarks on operational risk management. The number of warning signs is reduced resulting in fewer losses experienced.

It is expected that unlawful activities can be detected early before they result in losses if operational risk management is done. During the risk identification and reporting phases, activities that are likely to result in losses are identified and nipped in the bud. When this happens losses are either avoided or reduced when appropriate action is taken to mitigate the identified risks.

Thirdly, operational risk management lowers compliance and audit costs. If an organization is exercising operational risk management it is likely to be performing at or above set benchmark standards thereby resulting in fewer expenses in compliance or audit fees. For example if a company employs trained and qualified personnel for the job, it is likely to face fewer lawsuits from customers complaining about poor service or defective goods. If the organization is ISO 9001 compliant, it will be producing standard goods that will not result in lawsuits. If on the other hand there are no internal frauds or dubious business practices or if they are reduced this leads to reduced audit fees as all operations will be above board.

Lastly, operational risk management is expected to reduce exposure to future risks. If key risk indicators are identified and managed then it means in future losses will be minimized resulting from the mitigation done.

2.6 Challenges in implementing Operational risk Management

Blundell et al (2010) highlighted that one of the major challenges is to convince management or the board to devise an operational risk management policy. Traditionally managers have understood financial and credit risk which have outstanding incidences with high impact yet operational losses sometime hide within these large losses. If traced adequately most of those traditional risks may have been avoided if operational risks had been managed. For example if an employee gives credit without making serious background checks on a customer, that customer may default resulting in credit risk. The root cause however of that loss is operational risk. The "Know Your Customer" principle will not have been put into practice. If the employee had taken time to know the customer he may have realised that he was a high risk client. The person assessing the loan application there will have failed the business.

The other major challenge that has been brought forward in implementing operational risk management is the lack of loss data information thereby making it difficult to calculate the probability of loss. To be able to predict the probability of an event happening there is need for historical information about how often the event has occurred in the past and where it happened, the extent of damage that it caused or the impact of loss. Operational risk is modelled on getting buy-in throughout the firm. All levels of the firm's organizational structures need to appreciate the role and importance of operational risk management for the data to be collected effectively otherwise things will happen and be swept under the carpet.

Operational risk is not only transaction based. While some loss can occur after transacting when a customer brings back defective goods for example, there are other losses that happen irrespective of whether any transactions have taken place. Employee frauds can happen without the owner or manager's knowledge and without transacting. External factors can also cause losses with no transaction having taken place. The risk can only be recorded if it is reported making it difficult again to trace the likelihood of the events.

2.7 Empirical Evidence

In a study carried out by McEachern (2001) titled "Operational risk takes centre stage: Heller financial faces its operational challenges head on", management had encountered losses due to filing errors and credit write offs. The study sought to identify the key risk issues and

incorporate them in the enterprise wide risk management plan. The study found out that 'too many hands in a process can be problematic' and that an operational risk department is critical in an organization. It also recommended that all workers need to be educated on risk management and checks and balances need to be placed in all business processes.

Giarraputo (2003) in an article published in the Global Finance journal described the perception of UK management on risk after the September 11 attacks and the lessons that they had learnt. He found out that the surveyed business executives were paying more attention to the human factor, had back-up sites for their operations and were giving risk management top priority. While trying to detect the operational risk factors in Turkey, Koyuncugil and Ozgulbas (2009) found out that the educational background of managers, annual turnover and the operating length of firms are the factors that affect a company's financial profile.

In a doctoral thesis by Henschel in 2007 on "Risk management practices in the main industries of German SMEs, he set the objectives that he wanted to "obtain current risk management practices in German and to reveal the Problems that firms had in implementing risk management systems."The study came up with three risk management practices which were called reactors, defenders/prospectors and analysers. He also emphasized on business planning for a good risk management system.

Aghjelou presented a doctoral thesis on "an investigation of risk analysis and risk management in selected branches of cooperative banks in Pune" to the University of Pune in 2007. In his study, Aghjelou intended to verify the integrity of risk management systems, identify significant risk factors, and evaluate management and board of directors' understanding of the significant risks facing their banks and to recommend action plans to reduce the risks." The study found that there were differences in risk levels of cooperative banks. Management oversight contributed 11.9% of the risks faced, 35.1% by credit risk, 12.5% operational risk, 23.8% market risk and 16.5% was caused by liquidity risk. The study also noted that there was a vast difference between what management understood and what was in practice in the cooperative banks. The study recommended that there was need to carry out educational programmes and workshops on risk identification, analysis and mitigation.

In another research carried out by Lim (2010) on 'How risk management in SMEs contribute to a company's performance' he revealed that SMEs in the United Kingdom discussed how to handle general business risk once a year. The objective of the research was to find the influence of risk management on profitability. The study found out that SMEs allocated 0.5%

of company turnover towards risk management. The study concluded that risk management contributes to the financial performance of SMEs. This means that in the United Kingdom SMEs are aware of the business risks which they are prone to. They however may not be giving it adequate attention as they only considered it once a year.

Magableh, Kharabsheh and Al-Zubi (2011) in "Determinants and impact of training: the case of SMEs in Jordan" aimed at finding the influences of training, identify the determinants of training and to examine how the training impacts on SME performance. The study concluded that the manager's characteristics and the enterprise's characteristics influence training. In these characteristics were included attributes such as the age, education, perception, life cycle stage, size etc. It was also concluded that training had a positive impact on the level of performance of the SMEs since after training profits and revenues grew. The study recommended that Government should raise awareness on the importance of training as an investment and not a cost for enterprises. The results however showed that people can fail to effectively carry out their duties and lead to reduced profits and revenue because of lack of training.

Kallenberg (2009) in an article published in Risk Management Journal, studied "operational risk management in Swedish industry; emergence of a new risk paradigm". The objectives of the study were to "investigate the current opinions in Operational Risk Management in Sweden and to analyse the implementation of operational risk management". The researcher carried an in depth study with 20 experienced chief risk officers and used an explorative study to obtain his data. The study concluded that there was no coherent definition on operational risk management and 14 out of the 20 organisations represented had formal Operational risk management systems which differed on how they were organised

In an article published by the Risk Management Association in November 2011 written by Richard Pike titled "The main aim of ORM: no surprises", he argued that ORM helps management to eliminate surprises. They thus should consistently scan their environment and be aware of their risk positions and any changes that may be likely. He also emphasizes the need for constant communication with lower levels to ensure that risks are monitored and correctly measured. He also argued that irrespective of a business' size operational risk exists in all businesses. They are these surprises referred to by Pike that the current research wants to avoid for the SMEs who might have viewed ORM as a banking services sector phenomenon.

In a doctoral thesis written by Pitinanondha in 2008 on "Operational Risk Management systems- An Australian study" he came up with three objectives. He wanted to investigate the use of operational risk management, to study the factors that impacted on ORM and to

develop an ORM implementation model for Australian organizations. The study found out that 94.9% of the organisations that responded to the study were managing risk in one way or the other. The most common standard for risk management used was the ISO9001. The factors that he found to have an impact on ORM included leadership, planning and strategic alignment, continuous improvement, training, employee involvement and empowerment and communication. The study developed a model with three modules; management module, process module and human resources module which should interact to align with objectives and minimize losses.

In a study entitled **'**Determinants of small and medium enterprises failures in Zimbabwe: a case study of Bindura" by Mudavanhu V. et. al published in the International Journal of Economics and Research Vol.2 (5) p82-89, 2011,the researchers concluded that failure of SMEs is because of 'lack of general knowledge on business management, unavailability of credit, import competition and high cost of raw materials'. They found out that the association was very high, about 79%. The research subject matter is very relevant in the context that other economies have grown tremendously due to the input of Small and Medium Enterprises. In Zimbabwe however, it is not the determinants of failure that we should continue dwelling on, but rather a critical theory type of research where action needs to be taken. Researchers have to be responsible to the public and solicit for action from the relevant stakeholders to see the Small and Medium Enterprises growing and sustaining economic growth and development.

Zindiye (2011) in his study of 'an empirical investigation into the factors affecting the performance of SMEs in the manufacturing firms of Harare, Zimbabwe' published by Amazon aimed at investigating factors that influenced performance and their relationships. The study concluded that' managerial aspects which are in short supply have negative effects on the performance of SMEs and that lack of skills in human resources caused poor performance.' Zindiye recommended that the government, Empretec, International Labour Organisation (ILO) and SEDCO should "take measure and ensure survival and growth of SMEs. The named organisations have chipped in but SMEs continue to fail which is why this study intends to tackle the problem from an operational risk management angle. If things are not properly managed, including people, processes and systems then the performance will seriously be affected. Zindiye (2011) concentrated on verifying whether the said factors were the actual factors affecting poor performance. The current study intends to investigate if any operational risk management systems are in place in the manufacturing SMEs of Masvingo.

In an article in the Zimbabwean Financial Gazette of the 16th of November 2011 titled "SME advocacy: The missing link" by F. Mutambanengwe, the objective was to explore why SMEs do not grow and why they fail. It was suggested that SMEs that show some life are burdened by regulations by the Zimbabwe Revenue Authority and the National Social Security Association resulting in their failure. During consultations when industry is consulted, SMEs are usually not represented. Banks also lure such promising SMEs with expensive loans at 10% per month when large firms get loans at around 24% per annum. The enticed SMEs normally fail to service the loans and lose assets resulting in failure. Mutambanegwe recommended that SMEs should collaborate and form associations to explore new markets and represent the SME division when policies are made.

METHODOLOGY

3.0 Introduction

Research methodology refers to the methods by which data are gathered for a research project. It forms the basis upon which collection, measurement and analysis is done in order to achieve the objectives of the research. This research adopted both a qualitative and quantitative research paradigm because it is best suited for descriptive surveys based on small samples which are intended to provide insight and understanding of the problem at hand.

3.1 Research Design

Dawson (2002) defines research design as the conceptual structure within which research would be conducted. In this study we adopted a survey approach because it is the most appropriate technique for gathering descriptive information. More so, the descriptive survey was deemed appropriate to describe the relationship between the characteristics of the variables of interest.

3.2 Survey Area

The study was focused at analysing SMEs in the manufacturing sector of Masvingo. Masvingo city, located 295 km south of Harare, is the provincial capital of Masvingo Province and is the 5th largest city of Zimbabwe. The city is predominantly a service city due to its centrality to all other major cities. A greater number of the population is employed in the informal sector carrying the following activities textiles, clothing & footwear, metal fabrication, transport and cross-border trading.

3.3 Survey Population

The survey population was obtained from the Ministry of Small & Medium Enterprises Development in Zimbabwe (Masvingo Office) and the Great Zimbabwe Chamber of

Business. Thirty SMEs in the manufacturing sector were identified from these registers. The manufacturing sector comprised those in the clothing & footwear, furniture, peanut butter, beverages, detergents, bread & confectionery and metal fabrication.

3.4 Sampling Strategy and Population Size

The respondents had to meet the following criterion;

- Being a manufacturing entity
- Located in Masvingo
- Above 3 years in operation (since most SMEs die in their infantry stage, survivors are seen as successes)

In this regard we adopted a convenience sampling approach to obtain a requisite sample of thirty respondents. This technique gave the available subjects equal chance of being chosen.

3.5 Methods of data collection

3.5.1 Questionnaire

The questionnaire was adopted due to the size, distance and distribution of the population. Questionnaires are also economical in terms of money and time, enabled the respondents to remain anonymous and be honest in their responses. They were personally distributed by the research assistant during the month of August. A follow up was done to increase the response rate. Areas which needed clarity were explained to ensure that the questionnaires were properly completed.

Reliability of the questionnaire

According to De Voss et al (1998) reliability of a measuring instrument is the basis where the individual administration of the same measuring instrument delivers the same results when a comparison is made between two circumstances. To ensure its reliability, the questionnaire was first pre-tested by giving it to experts in the field.

Validity of the questionnaire

Validity refers to the extent to which a test measures what it intends to measure. Content validity in this study was perceived to be great, since it was evaluated by experts in the field, due to the small sample of the study. Thus it was believed the instrument fulfilled the purpose of its measure.

Rating Scale

A four point Likert Scale was used in the measurement of operational risks being faced by small businesses, for which four was regarded as a key contributor with one being the least.

The Likert Scale ensured standardisation of the response items and comparable among the respondents. More so, responses are easy to code and analyse directly from the questionnaire.

Pre-Testing

Refers to the testing of the instrument on a sample of respondents to identify and eliminate irrelevant questions. All aspects were tested, including wording sequence and layout. Thus the questionnaire was given to a sample of the respondents in the field and colleagues in the academic fraternity to check the accuracy of the instrument.

3.5.2 Interviews

Structured face to face interviews were conducted by the principal investigator. During the interview the researcher posed questions to the interviews and jotted down the responses in a note book. The interviews were conducted to those subjects who had no time to complete the questionnaires and those without expertise in the topic under investigation. The subjects were interviewed for 30-45 minutes after hours when they were not very busy.

3.6 Data documentation and storage

A spreadsheet was used to store data collected from questionnaires. The data collected and entered onto a spreadsheet after the interview and coded.

3.7 Data Analysis

Since the methodology adopted for this research was a descriptive survey, descriptive statistics were deemed appropriate for this research because of the relatively small sample size. Tables and bar charts were used to present data. The Friedman Two-Way ANOVA was also used to analyse the responses on variables affecting Operation risks.

RESEARCH FINDINGS AND DISCUSSION

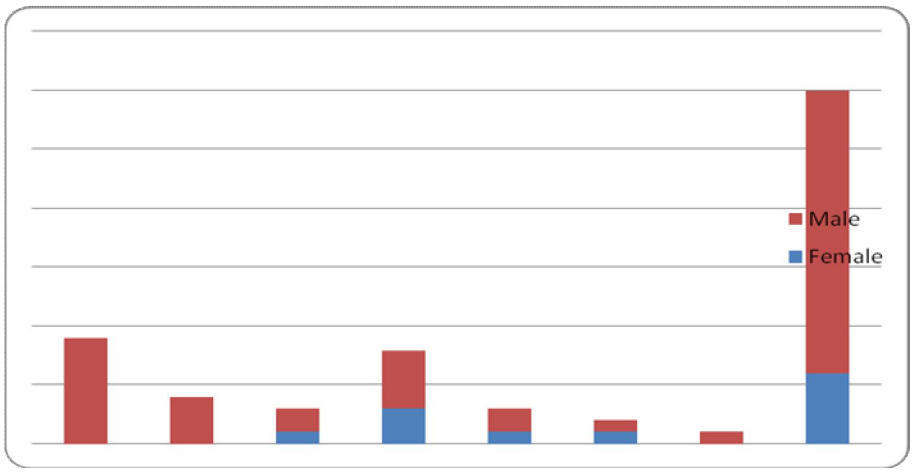
4.0 Introduction

The preceding section discussed the data collection methodology and alluded to the issues pertaining actual data collection process. The results of the statistical analyses are presented in this section. The implications of the findings are discussed in light of the research objectives.

4.1 The Descriptive and Frequency Statistics of the Research Findings

A total of twenty-five questionnaires were distributed to manufacturers in Masvingo urban and twenty were filled in and returned representing a response rate of 80%. Ten interviews were carried out to complement the data collected through questionnaires. The following distribution was reported;

Figure 4.1: Demographic Distribution of respondents



Source: Raw Data

Female respondents represented 20% of the total sample, clearly showing the gender imbalances in the management of SMEs in Masvingo. About 33.3% of the respondents had qualifications of 'O' Level and below, 23.3% had 'O'level plus some other course, 30% are graduates and 13.3% had post graduate qualifications. The data distribution shows that a greater percentage of the owner/ managers are lowly qualified constituting 56.7%.

1.2 Employment Practices

Table 4.1 Responses on Employment Practices

	Response	Frequency	Percentage
Organization employs skilled workers	Strongly agree Agree	12 18	40 60
Organization trains workers	Strongly agree Agree	18 12	60 40
Monitoring and evaluation is strict and adhered to	Strongly agree Agree	8 22	26.7 73.3
External personnel provide error free services	Agree Disagree	15 15	50 50

Source: Raw Data

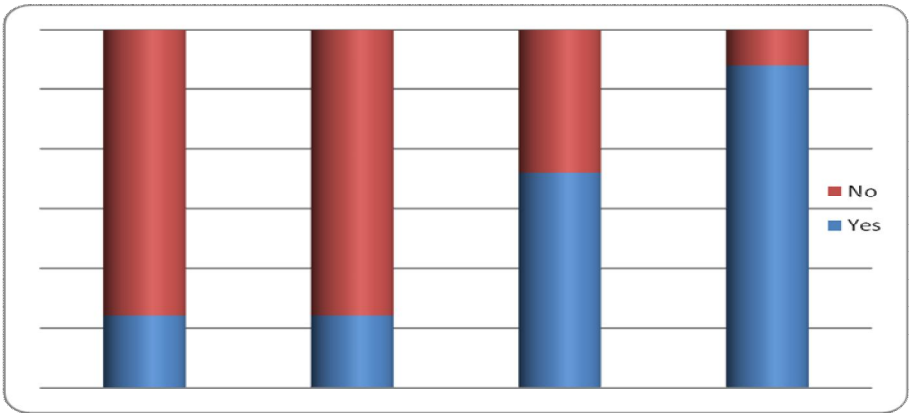
It can be interpreted that most of the SMEs had good employment practices as skilled employees were engaged and even trained. A closer analysis however revealed that sometimes the skill that the respondents referred to was experience as they had done the particular role elsewhere before joining the organization. The responses on monitoring and evaluation clearly show that there existed loopholes in the practices as respondents decided

to be safe on agreeing and strongly agreeing. External personnel were identified as a strong possible source of risk as 50% said they provided services flawed with errors.

1.3 Systems and Internal Processes

The results in the table below show that most, 80%, of the SMEs are not computerized and according to them they therefore have no need for backup systems. Those that had backups referred to generators when power fails, maintenance personnel for machinery breakdown and a few alarms. Employees had specialized tasks in 60% of the cases who where sometimes supervised.

Figure 4.2: Responses on Systems and Internal Processes



Source: Raw Data

1.4 Operational Risk Management

The respondents said that they had no risk management strategy in place. It was evident even from the interviews that 80% of the SMEs operated a day at a time. There were no strategies to counter losses as a result of poor employment practices, electrical faults, internal fraud, and failure in operating systems or even external events. In 90% of the cases the owner/manager is responsible for operational losses. Audits are haphazardly carried out and usually only on the books of accounts, which according to Segal(2011) do not reveal the operational loss events. Sixty percent of the respondents carried out internal audits once every year.

When employees cause losses in the organization, 60% of the respondents said they would fire the employee, 30% said they would retrain the employees and the remaining 10% said no policy was in place as to what would be done but in all cases they expected the employee to reimburse the organization.

On the operational risk management systems in place in the organizations, 60% said they had none, while the remaining 40% identified security guards, audits, generators, clear

organizational goals and stock controls as their ORM systems. Only one, 3.3%, of the respondents is ISO 9001 certified.

1.5 Risk Priority Indicators

A mark of 5 was given for high, 3 for moderate and 1 for low on the responses. Risk Priority Numbers were assigned to the responses given by the respondents. There was evidence that SMEs in Masvingo are not clear of the likelihood and severity of loss posed by the risk categories put forward by the Basel Committee. This was shown by the inconsistencies recorded by respondents. One would give a high risk priority number (Severity X Likelihood) to a risk category but go on to rank the risk lowly. It was noted that manufacturers who had the same person doing the same task all the time had a high likelihood of internal fraud and a high to moderate severity of loss resulting in a high risk priority number. Generally external fraud recorded the lowest Risk priority number for most, 90%, of the respondents. This was however contrary to the 50-50 response rate recorded on whether external personnel provided error free services earlier on. Respondents agreed that employment practices and workplace safety had moderate likelihood of occurring causing low to moderate severity of loss. The table below summarizes the Risk Priority Numbers calculated from the responses.

Figure 4.3 Risk Priority Numbers

Risk category	Risk Priority numbers(Frequency)						Total
	H-H(25)	H-M MH(15)	M-M (9)	H-L L-H (5)	M-L L-M (3)	L-L (1)	
1.Internal fraud	15	-	9	-	-	6	30
2.External fraud	3	-	-	-	-	27	30
3.Employment practice and workplace safety	-	-	9	6	3	12	30
4.Clients, products and business practices	-	-	18	9	3	-	30
5.Damage to physical assets	15	-	12	3	-	-	30
6.Business disruptions and system failure	3	-	-	-	6	21	30
7.Execution, delivery and process management	-	-	-	18	9	3	30

Source: Raw Data

The respondents then went on to rank the risk categories assigning a one (1) to the most prominent category in their organizations and a seven (7) to the least prominent risk category. In analysizing the findings the Friedman's two way ANOVA was used to determine whether there is a significant difference among the factors influencing operational risks in manufacturing SMEs in Masvingo. A summary of the findings produced the results shown below.

H_0 : There is no significant difference among the factors influencing Operational Risks in manufacturing SMEs in Masvingo.

H_1 : There is a significant difference among the factors influencing Operational Risks in manufacturing SMEs in Masvingo.

Table 4.7: Table on the ranks on factors done in the manufacturing SME sectors in Masvingo

Manufacturers	Factors						
	IF	EF	EPWS	CPBP	DPA	BDSF	EDPM
Furniture	2	6	5	7	1	3	4
Bread	4	6	5	7	3	1	2
Detergents	3	7	6	2	4	5	1
Bricks	4	6	2	3	5	7	1
Clothes	4	7	1	5	6	3	2
Peanut Butter	5	7	3	4	6	1	2
Sponge iron	5	2	4	7	6	1	3
Total ($\sum R_j$)	27	47	26	35	31	21	15
$\sum R_j^2$	729	2209	676	1225	961	441	225

Source: Raw Data

Key to acronyms in the table:

IF: - Internal Fraud

EF- External fraud

EPWS- Employment practices and workplace safety

CPBP- Clients, products and business practices

DPA- Damage to physical assets

BDSF- Business disruptions and system failure

EDPM- Execution, delivery and process management

$\sum R^2$ = 729+2209+676+1225+961+441+225 =6466

Calculation of Friedman's Statistic

$$\chi^2 = \frac{12}{Nk(k+1)}\sum_i^j R_j^2 - 3N(k+1)$$

χ^2 = 12 (6466)-3x7 (7+1)

7x7 (7+1)

= .031(6466)-168

= 29.94

Tested at 5% level of significance the Critical Value from the Chi-square Tables at (k-1) which translates to 6 degrees of freedom is 12.592.

Decision: The calculated Friedman Statistic of 29.94 is greater than the Critical Value of 12.592. Therefore reject the Null hypothesis that there is no significant difference among the factors influencing Operational Risks in manufacturing SMEs in Masvingo.

Conclusion: Looking at the scores it can be seen that at least one factor is more influential on Operational Risks. Execution, Delivery and Process Management was found to be the most prominent factor in influencing Operational risks.

4.8 **Key Risk Indicators**

There was evidence that the manufacturing SMEs were not recording the little infrequent events that happen in their organizations as 70% of the respondents answered that , system failure, number of failed trades, errors in transaction processing ,number of unauthorized transactions and fines for improper practices had never occurred in their organizations. It could be that these were never reported whenever they happened but losses would be encountered and unrecorded. For example employees can produce small items in the furniture industry using the raw material and sell without the owner manager's knowledge. Staff turnover was indicated as low by 60% of the respondents, as moderate by 30% and only 10% said it was high. The numbers of injuries were moderate in 53.3% of the respondents, a sign that businesses lost valuable production time due to those injuries. Manufacturing SMEs' key risk indicators could not be ranked as most only accepted staff turnover as a warning sign that all was not well especially when key personnel was involved.

Summary, Conclusion and Recommendations

The study set out to investigate the operational risk management systems used by manufacturing SMEs in Masvingo town during the period 2009-2011 and to suggest mitigation measures that SMEs can adopt to reduce failure and achieve economic growth and sustainable development. A sample of thirty manufacturing SMEs from Masvingo town was used and the descriptive survey design was employed. The study was largely prompted by reports that SMEs have failed as engines for growth and that most SMEs fail in their first three years, (Gemini Report 1993).

It was not easy to carry out this study as most SMEs were not familiar with the term 'Operational Risk Management' and they did not have records of the incidences and risks that have caused losses in their organizations. Inspite of all this, the researcher complemented the questionnaires with personal interviews and interesting findings were made.

Hussain et al (2011) argued that SME failure was due to deficiencies or weaknesses in operational risk management. This appears to be true even in the Zimbabwean context especially in Masvingo as the following findings were recorded:

- No ORM strategies were in place in 70% of the respondent SMEs.
- The people were found to be the major cause of loss as even most of the processes were spearheaded by the people. This was confirmed by the rejection of the null hypothesis that there is no significant difference among the factors influencing operational risk.
- The most influential factor was identified as Execution, Delivery and process management. This factor involves how people carry out business on a day to day basis, transaction processing, miscommunication, missed deadlines or responsibilities, system misoperation, client management, vendor/ supplier disputes (Tarantino et al ,2009; 54).
- In some cases no records existed on events that lead to losses. In trying to identify key risk indicators, 60% of the SMEs had no records of things like the number of failed trades, errors in transaction processing, fines for improper practices; although these had been identified as the most influential factor under Execution, delivery and process management.
- The mitigation methods that were cited in the SMEs included generators, security guards, supervisors, internal audits and training. These were also found to be limited to physical stock and books of accounts.

CONCLUSION

The study concluded that there is need to educate SMEs on ORM if they are to achieve the engine for growth function and for sustainable development. From the findings the study concluded that:

1. No formal Operational Risk Management systems are in place in manufacturing SMEs in Masvingo. The supervision of employees, systems and external environment is haphazard, without having laid down frameworks in place. While this can be attributed to the size of the organizations it is still important to have ORM strategies in place.
2. The owner/ managers are tasked with most of operational risk management responsibilities but they do not have the knowledge themselves. This results in poor operational risk management as the owner/manager is overburdened with responsibilities. Where guards are also roped in, the guard is sometimes not guarded himself.
3. Because there is no ORM strategy in place, when unforeseen events happen SMEs fail and become extinct. Usually there will not even be any back-up system, plan or savings to resuscitate operations, (Giarraputo 2003).
4. The use of the same person to do a particular task highly exposes the SMEs to internal fraud, execution, and delivery and process management challenges. This is so because even in SMEs that carried internal audits, they were not regular and they concentrated on books of accounts yet operational losses can be caused by events not recorded in books of accounts (Jorion 2003).
5. The human factor was found to be the most influential factor in causing operation risk as confirmed by the rejection of the null hypothesis that there is no significant difference on the factor affecting operation risk in manufacturing SMEs in Masvingo.

Recommendations

1 Owners/ managers need to be educated on operational risks and the most influential signs that lead to operational losses; the key risk indicators.

2 The risk tolerance level of the SME should be communicated to the employees and the employees should own the objectives of the SME if the operational losses are to be minimized. As advocated by Pike (2011), there would be no surprises if there is constant communication and environmental scanning.

3 The MSME, SEDCO and other interested stakeholders should educate SMEs on entrepreneurial skills including Operational Risk Management for sustainable development.

4 The SMEs should train employees not only on the task they are to perform but on loss minimization, customer care and other aspects that reduce operational losses. This can be done individually or through their associations.

5 The Basel Accord requires banks to put aside a capital charge to cater for ORM. SMEs could adopt the same principle. They should set aside a percentage of their earnings as a contingency in case the worst scenario happens. In the UK, Lim (2010) found that SMEs allocated 0.5% of the company's turnover towards risk management and the same could be adopted for Zimbabwean SMEs.

6 Unless SMEs manage their operations proactively, they cannot compete with large organizations and they will not realise the envisaged growth and sustainable development.

7 Equal access to quality education is a pre-requisite for sustainable development.

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