

## COMPARATIVE STUDY OF ENTERPRISE RISKS AND MANAGEMENT PRACTICES BETWEEN MICRO AND SMALL INDUSTRIES (MSIS) AND MEDIUM AND LARGE INDUSTRIES (MLIS) IN NAKURU MUNICIPALITY, KENYA

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### ABSTRACT

**M**icro and Small Enterprises cut across all sectors of the economy, providing a prolific source of employment, income and government revenue and contributes to poverty reduction. The sector comprises 75% of all businesses in the country, employs more than 4.6 million people (30%) and accounts for 18.4% of the country's GDP 2014. However, two-thirds of micro and small enterprises fail within the first few months of operation. Further, small and micro manufacturing industries due to their size are more vulnerable to business uncertainties compared to medium and large industries. The objective of this study was to compare the enterprise risks, and risk management practices between micro and small industries on the one hand and medium and large manufacturing industries on the other hand in Nakuru Municipality. A combination of descriptive and comparative study designs was used. The most common risks in medium and large manufacturing enterprises were theft, personal injuries, property damages and critical machine breakdowns while in micro and small industries common risks were property damages, theft and natural calamities. There was a significant difference in the level of risks facing small and large industries on risks stemming from the business internal environment. Risks from external environment were not significantly different between the Micro & Small and medium & large enterprises.

**Key Words:** *Economic Growth, Risk, Micro & Small Industries, Medium and large Industries*

## Introduction

Despite the role they play in the economy, MSEs have had their peculiar challenges hindering growth, performance and achievement of their purpose in the economy, for example, in the UK the number of small business closures stood at 85 per day during the global economic crisis in early 2009 (ILO, 2009). In Nigeria, this sub-sector has fallen short of expectation (Osotimehin, Jegede, Babatunde & Olajide, 2012). In Kenya, three out of five enterprises fail within the first few months of operation (KNBS, 2007). This has a negative impact to the economies affected. Osotimehin, *et al.*, (2012) has shown a high correlation between the degree of poverty, hunger, unemployment, and economic well being of the citizens of countries and the degree of vibrancy of the respective countries micro and small scale enterprises and this is why the paper sought to find out the risks and management strategies.

In countries such as Korea where the MSEs sector has been described as the most dynamic sector in the economy, it was identified as the most vulnerable to the external shocks that resulted in reduced sales volume, increased bankruptcies and closures (Dae Suh, 2011). Further MSEs in Korea are faced with decline in the demand for products and services due to liquidity and credit related problems, sharp increases in the price of raw materials, considerable fluctuations in the exchange rate, and inflation pressure, regulation and compliance. The situation was complicated by running business without access to expert bears higher risk (Dae Suh, 2011).

In Malaysia statistics show that not many MSEs graduated into becoming large corporations despite the increasing number of MS&MEs established each year. This phenomenon was also attributed to the risk profiles of MSEs and their low risk taking propensity. MSE owners were afraid of expanding their business for fear of risks and uncertainties they might face if they became larger corporations (Salleh & Ibrahim, 2011). Risks identified in the MSE sector include: leverage on financial structure, tough competition, inadequate margin, low collection in account receivables, incapacity to go for technological advancements, high employee turnover, credit risks and interest rate risks (Raghvan, 2005). The risk profiles of MSEs make it difficult even for lenders to be able to assess risk premiums due to the differences in the perceived versus real risk profiles (ILO, 2009). This puts enterprises into crisis of accessing expansion capital among other crises. Looking at the portfolio of risks facing MSEs, they could be categorized as industry risks, business risks, financial risks, management risks, and compliance risks.

Lack of risk management strategies in place also remains to be a common trend among MSEs amidst many risks, a factor that could be closely linked to the high mortality rate. Raghvan (2005) points out that in the past two decades, nearly 80 per cent of the organizations that lacked business contingency plans and suffered catastrophic loss of property, records, customer loyalty, skilled and trained workforce and/or cash flow, wound up within a couple of years of the incident.

Research has shown that the main reason for small firm failure is poor management of the business which falls within the internal environment which is directly controllable by the owner-managers (Megginson, Byrd & Megginson, 2003). This would therefore suggest that if enterprises can identify and isolate the factors from the internal environment that contribute to business failure, measures can be put in place to avoid these pitfalls for start-ups. The essence of risk management is to reduce risks to a reasonable and manageable level, on an on-going basis (Tatum, 2003). Compared to larger companies, MSEs are not different in risk exposures although their size makes them particularly vulnerable to the impact of unfavorable business conditions, and they rarely have the resources to have dedicated risk management systems and professionals (FERMA, 2006).

## **Problem Statement**

Since their emergence, MSEs continue to play a key role in economic development globally through contribution to the GDP and act as spring boards for economic development. Research has shown that despite the high number of enterprises born, their mortality rate remains very high even in developed countries. For instance, the UK registered 85 MSEs closures in 2009 (ILO, 2009) while in Kenya, 60% of MSEs do not operate beyond the first three years (KNBS, 2007), which according to (Churchil & Lewis, 1983) business cycle is within the first stage of operation. Enquiries by (Raghvan, 2005; Megginson, Byrd & Megginson, 2003; Dae Suh, 2011) into the root causes of poor performance and the high mortality rates point out to a wide range of risk factors that negatively impact on operations and enterprise survival. These include operational risks, technological risks, and financial risks among other risk factors. The risk propensity of MSEs has also been identified as low (Salleh & Ibrahim, 2011). To minimize their effects on businesses, there is need for proper risk management strategies to be put in place (Raghvan, 2005). Knowledge on the risk management strategies applied by MSEs remains scanty especially in less developed economies nor is it known how the risk management practices in MSIs compare to those employed in MLIs. There is also lack of standardized operation procedures and guides to assist MSEs in managing enterprise risks and this is why the paper sought to fill the existing gap.

## **Purpose and Objectives of the Study**

The purpose of this study is therefore to compare the types of risks Micro & Small Industries on the one hand experience as compared to Medium and Large enterprises and also compare how the two categories of manufacturing enterprises manage risks so as to understand what can be borrowed from the practices of established firms in ensuring survival and competitiveness of Micro and small enterprises. The specific objectives include comparing;

- i) Risks experienced by MSIs to those experience by MLIs
- ii) Likelihood of Risks occurring to MSIs and MLIs
- iii) Levels of risks expected in MSIs and in MLIs
- iv) Levels of losses experienced as a result of risks by MSIs and those of MLIs and
- v) Risk management strategies adopted by MSIs and MLIs

## ***Literature and Conceptual Framework***

In the contemporary economy, Micro and Small Industries (MSIs) in the industrialization process have gained much prominence in developing countries. Their prominence came into the limelight in the late 1970s and early 1980s due to the economic recession originating from the UK which led to the closure of big manufacturing firms and a decline of industrial growth in many developing countries. Governments of such countries adopted a new policy approach towards the Small Scale Industries (SSIs) which were seen as providing a viable alternative to the large scale industries which were so dependent on foreign exchange (Ankomah, 2012). Since then small scale industries have continued to grow and the concept has since transformed from small scale industries to small scale enterprises to include businesses undertaking activities in other sectors of the economy.

Today, the economic roles played by micro and small enterprises (MSEs) have been well manifested in many countries of the world including Malaysia, Japan, South Korea and Zambia. MSEs contribute substantially to the Gross Domestic Production (GDP), export earnings and in the creation of employment

for a larger population in these countries. In India they contribute 8% of the national GDP, comprises 50% of total manufactured exports, 45% of India's total industrial employment and 95% of all industrial units (Ravi, 2009). In Kenya, MSEs account for 75 per cent of total the employment outside small scale agriculture and pastoralist activities sector, and an estimated 30 per cent of the country's GDP (ROK, 2008). Therefore they act as the springboard for a country's sustainable economic development. Promotion of MSE development encourages the development of indigenous entrepreneurship, enhance regional economic balance through industrial dispersal and generally promote effective utilization of local resources that are considered critical in engineering economic development (Tolentino, 1996; Oboh, 2004; Odeh, 2005). It becomes imperative then, that every effort be made to address issues that lead to failure and eventual collapse of the MSE sector. The focus of this paper is risks and their management in micro and small industries as compared to what happens in medium and large industries.

### ***Risks Facing MSEs***

The etymology of the word "Risk" may be traced to the Latin word Rescum, which means Risk at Sea (Raghavan, 2005). In business, risk is always measured against capital and therefore the Capital to Risk-weighted Assets Ratio (CRAR) is much in vogue. Risk is the potentiality that both expected and unexpected events may have an adverse impact on the capital and earnings. Risk management on the other hand is a logical process or approach that seeks to eliminate or at least minimize the level of risk associated with a business operation (Tatum, 2003). Risk Management therefore plays a key role in protecting enterprise assets and resources by ensuring that risks are reduced to an acceptable level.

### **Peculiar Characteristics that Expose MSEs to Risks**

Micro and Small enterprises by virtue of their size and the mode of operation are subjected to a number of risk factors. Deloitte (2006) states that, MSEs have vast potential market for MSE finance, with little competition, high profit; massive potential 'first mover advantage' but managing risks is a key challenge. Mwaniki (2006) identified several peculiar characteristics of the micro enterprises, which makes them more vulnerable to things going wrong. According to Mwaniki (2006), most MSEs do not or rarely keep records; they lack traditional collateral and require small and short-term loans; they have limited access of financial services, most lack capital & stability, use simple technology, they also lack entrepreneurial and management skills due to high illiteracy levels; most MSEs tend to remain basic and with low growth rates. Raghavan (2005) indicates that MSEs may not have wherewithal to manage and control risks due to their very size and several limitations. These make MSEs vulnerable to enterprise risks, and also have limited ways of mitigating the risks whenever they strike.

### **Risks Specific to MSEs**

Like every organization MSEs are faced with risks. According to a survey carried out by the Institute of Chartered Accountants (2005), the pressing challenges facing MSEs were identified as loss of key staff, IT risk, market changes and image impairment respectively. Raghavan (2005) identified the key risks facing MSEs as being; Constitution of business entity where lack of professionalism and overdependence on one or two key persons; leverage on financial structure; tough competition; inadequate margin; low collection in account receivables; inability to cope with technological advancement and high employee turnover.

Technoserve, (2007) in a research carried out in central Kenya revealed that, the level of business understanding among micro enterprises was very shallow. MSEs in Kenya still faced difficulty in accessing capital as financial institutions were reluctant to lend to them leading to the high risk of death associated with MSE lending and high transaction costs involved. The high risk in MSE lending was also confirmed by

(International trade centre, 2009) who revealed that financial institutions classify all MSEs as high-risk companies therefore unsuitable for lending. This implies that the credit risks in MSEs were high.

### **Risk management in MSEs**

Generally MSEs have been defined as high risk ventures with little or no structure for managing risks. Absence or minimal involvement of MSEs in risk management activities has drawn a lot of reactions from many parties. In a training by Federation of European Risk Management Associations (2006) to reduce MSE loss or failure aimed at improving the business performance and reducing the risk of loss and failure among small and medium sized businesses, it emerged that, MSEs were no different from other organizations, but their sizes made them particularly vulnerable to the impact of things going wrong, and they rarely have the resources to have dedicated risk management professionals.

Poor risk management practices are very common among MSEs. In an online MSEs survey, a UK based firm Light speed Research (2009), revealed that more than a third of MSEs cut their level of insurance cover in order to cut down their costs during tough economic times. Further, 13 per cent lacked adequate insurance cover for their business while one quarter had minimum cover only for what was legally required. Mwaniki (2006) in a study in 18 African countries revealed MSEs had weak risk assessment and management strategies in place. Some of the institutions studied cited inadequate staff training, lack of relevant skills to enable them make good decisions, lack of business records, inadequate entrepreneurial and management capacities by the MSEs relevant in managing risks.

Even established institutions who work with and support MSEs admit the poor structures available for risk assessment and management among MSEs. Wendel & Harvey (2006), found out that, Kenyan lenders including banks lacked cost-effective ways to quantify credit risk in MSEs a factor that hinder full penetration into this market segment. Ingirige (2008), observed that MSEs specifically were faced with poor planning, vulnerability to cash flow interruptions, lack of capital for recovery, ineffectual interactions with national agencies, infra-structure problems, individual attitudes and organizational culture, access to expertise, business sector and perceived exposure to risk. Collectively these factors determine the adaptive capacities and the overall behavior of MSEs.

According to Satchu (2009) to cultivate sound risk management, first MSEs need a coherent view of the world and an awareness of the challenges other similar enterprises face in order to consider and forecast on how they might be affected. This forms a basis of consciously planned and systematic risk management practice beyond common sense. There is also need for carefully designed micro insurance and risk management practices tailor made for MSEs. Finance Sector Deepening (FSD) (2009) identified some of the risk management products for MSEs as bid and performance bonds, crop and weather insurance, and cover for supply chain risks. None of these products is fully developed or actively used in the Kenyan market although some companies offer bid and performance bond cover and others like CIC insurance company have started offering the crop and weather policies.

Only 44% of small businesses in the world survive for four years or more, one big reason for their mortality rate being poor risk management (Nicholas, 2009). Cunningham (2008), in a discussion on MSE risk management series pointed out that SMEs have more reason to manage risk compared to their Medium and Large Enterprise counterparts. Proper risk management creates a competitive advantage, especially in times of crisis because it provides better identification of business opportunities and threats, and better corporate governance. Effective risk identification, assessment and mitigation, businesses can unlock the valuable upside of risk and create competitive advantage, certainty, security, efficiency, resilience and confidence.



Risk management by virtue of being an ongoing process can help improve operations, prioritize resources, ensure regulatory compliance, achieve performance targets, improve financial stability and ultimately, prevent loss or damage to the entity. It aims to secure the well-being of the company and its employees (Raghavan, 2005). Enterprise risk management (ERM) which involves continuous, holistic view of risks and risk management has been internationally recommended by international rating agencies such as Harvard Business Review, Sarbanes Oxley Act of 2002 and Basel Capital Accord II as a tool for ensuring better performance in times of crisis (Buchanan, 2004).

There are significant challenges to the implementation of ERM, one of which is the adoption of the ERM mode. According to Gate (2006) and Deloitte (2008), ERM as a risk management tool is yet to be fully integrated into business decision making. Another challenge experienced is the variation in risk appetite between individuals and corporations. One of the major formulations on ERM was made by COSO (2004) which encompasses the crucial concept of risk appetite (Ai, *et al.*, 2012). Risk appetite is a corporation's willingness and ability to undertake risks to achieve its strategic objectives that governs business decision making. In addition, interrelations between risks and the prioritization of risks are rank in order of risk types according to importance, which is critical to holistic integration. This holistic integration is an important characteristic of the stated end-goal for ERM which is mainly to gain competitive advantage and create value (Economist Intelligence Unit, 2007).

Giesecke, *et al.* (2012) in their study on economic impacts of catastrophic events investigated the regional economic consequences of a hypothetical catastrophic event attack via radiological dispersal device centered on the downtown Los Angeles area. They found out that catastrophic risks when they strike can lead to the resource loss effect and shifts in the perceptions of economic agents which they termed as the behavioral effect. The resource loss effect relates to the physical destructiveness of the event, while the behavioral effect relates to changes in fear and risk perception. Other researchers have also concluded that when some disastrous risks strike, they lead to social, political, or economic consequences that go beyond the direct harm caused.

Zhou & Liu (2012) while studying on risk assessment of major hazards and its application in urban planning in china indicated that, in rapidly developing manufacturing industry, it is essential to conduct a comprehensive risk assessment of the manufacturing establishments not only to the employees inside but to the general public and environment. Many manufacturing industries handle flammable, explosive, toxic, harmful, and dangerous substances. Therefore accidents such as fire, explosion, and toxic diffusion inevitably happen. Accidents resulting from these major hazards in cities cause a large number of casualties and property losses. As a result, it is important for both the governments, and developers to increasingly attach importance to the analysis of major hazards in cities realistically and to suitably plan and utilize the surrounding land based on the risk analysis results, thereby reducing the hazards.

In Kenya, based on the governments Vision 2030, mushrooming of industrial parks at regional, and constituency level targeting the establishment of MSIs also pose similar challenges as experienced in China. It is however not clear as to who bears the responsibility for proper risk assessments in these establishments. Risk analysis is the foundation and scientific basis of safety planning for urban land use. Therefore, it is necessary to use risk analysis to plan the industrial park, the location of construction projects, and the surrounding land uses of industrial parks or projects, taking into consideration which areas are designated for residential use, which areas for business, and which areas should be restricted on population density. Reasonably safe distances should also be established between the industrial park or building projects and the

sensitive targets, so as to balance the land effectiveness and risks, not only to ensure that the land is maximally used but also to minimize significant risk for urban public safety (Zhou and Liu, 2012).

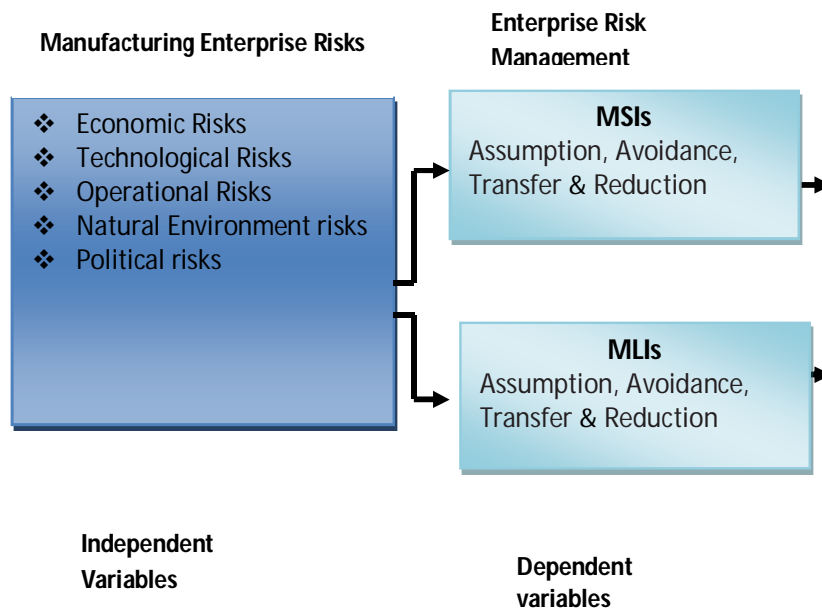
This study is based on the enterprise risk management model developed by the Committee of Sponsoring Organizations of Treadway Commission [COSO], 2004. For a long time, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) has issued Internal Control Integrated Framework to help businesses and other entities assess and enhance their internal control systems. That framework has since been incorporated into policy, rule, and regulation, and used by thousands of enterprises to better control their activities in moving toward achievement of their established objectives. Following the growing needs for a more comprehensive framework for risk management, COSO in 2001 initiated a project, and engaged Price water house Coopers, to develop a framework that would be readily usable by managements to evaluate and improve their organizations' enterprise risk management. COSO ERM was meant to provide key principles, concepts, a common language, and a clear direction and guidance on risk management.

COSO enterprise risk management integrated framework expounds on internal control, providing a more robust and extensive focus on the broader subject of enterprise risk management. The framework is designed on assumption that, all entities face uncertainty and the challenge for management is to determine how much uncertainty to accept as it strives to grow stakeholder value. Further, it assumes that, uncertainty presents both risk and opportunity, with the potential to erode or enhance value. Enterprise risk management encompasses: aligning risk appetite and strategy, enhancing risk response decisions, reducing operational surprises and losses, Identifying and managing multiple and cross-enterprise risks, seizing opportunities and improving deployment of capital. These principles in enterprise risk management help management achieve the entity's performance and profitability targets and prevent loss of resources (COSO, 2004). Enterprise risk management consists of eight interrelated components derived from the way management runs an enterprise and also integrated with the management process. These include internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication and monitoring (Lai, 2012)

However this model of risk management has its own challenges. The COSO ERM framework is based on individual decision making. The challenges result from the realities that human judgment in decision making can be faulty, decisions on responding to risk and establishing controls need to consider the relative costs and benefits. Two or more people and management have the ability to override enterprise risk management decisions. Secondly, the eight components may not function identically in every entity. Application in small and mid-size entities, for example, may be less formal and less structured. Nonetheless, small entities still can have effective enterprise risk management, as long as each of the components is present and functioning properly. In relation to the current study, this model provides a basis of identifying, evaluating risks and the risk management strategies. The comprehensiveness of an enterprise risk management framework according to the study may be evaluated on the eight basic components, and the comprehensiveness on the risk portfolio being managed in enterprises. This model also provides a basis of evaluating risk management in enterprises regardless of size and the formal structure under which it is implemented (COSO, 2004; Stoke, 2004)

The conceptual framework (figure 1) shows the interrelationships of the study variables informed by the enterprise risk management framework guided by the theory of enterprise risk management summarized in (Nocco & Stulz, 2006). Nocco and Stulz (2006) define ERM as an approach under which all risks are viewed together within a coordinated and strategic framework, assessed and measured to mitigate or exploit the opportunities behind the risk put in place. They further argue that ERM creates value, because it

strengthens the firm's ability to carry out its strategic plan, by minimizing costs and maximizing profitability of the organization. In view of this, the conceptual model assumes that every organization big or small operates in an environment with risks and uncertainties. Therefore the management strategies adopted play a key role in determining the enterprise performance. The level of application of risk management strategies between Micro and Small Industries (MSIs) and that of Medium and Large Industries (MLIs) vary significantly.



Figure

### 1: Manufacturing Enterprises Risks and Enterprise Risk Management Strategy

This study conceptualizes that manufacturing enterprises regardless of their sizes are exposed to similar risks from the business macro environment (Independent Variable). Macro level risks peculiar to a manufacturing business set up can be categorized based on their origin as; Economic Risks; Technological Risks; Operational Risks; Hazard; Natural Environment risks and Political risks. Variations however arise in the way these two categories of enterprises manage the risks facing them based on their size (dependent variables). depending on the way an organization views and characterizes a risk on the basis of uncertainty, and loss levels, the measures put in place lie under four categories: risk retention, risk reduction, risk transfer or risk avoidance. Decisions on the risk management options are based on enterprises risk rating.

### Methodology

This study was conducted in Nakuru Municipality within Nauru County. Nakuru town was established by the British as part of the white highlands during the colonial era. This study adopted a combination of comparative and descriptive designs to establish the risks and risk management strategies adopted by MLIs compared to MSIs within Nakuru Municipality and their influence on enterprise performance. The target population for the study was 1937 manufacturing industries. These included 1847 MSIs and 90 MLIs. There were three Juakali Associations in Nakuru Municipality and all were chosen for study. The sampling frame for MSIs was obtained from the ministry of labour, Department of MSE Development, (DMSED) Nakuru District, which comprised of three Jua Kali associations: Bondeni, Shabaab and Central. On the other hand, the sampling frame for MLIs was obtained from the District Industrial Development office Nakuru (DIDO). DIDO Nakuru had 90 registered medium and large manufacturers. MSIs that operate as informal street vendors without licenses or even business names and affiliation to Jua kali groups were not included in the



study. To obtain the desired sample size for the study, Nassiuma (2002) formula was used. Two independent samples were obtained: sample for MLIs ( $n_{MLIs}$ ) and sample for MSIs ( $n_{MSIs}$ ).

$$n = (Nc_v^2) / (c_v^2 + (N-1) e^2)$$

Where:

$n$  = Sample size

$N$  = Population

$C_v$  = Coefficient of variation (take 0.5)

$e$  = Tolerance at desired level of confidence, take 0.05 at 95% confidence level

The sample size for MLIs ( $n_{MLI}$ ) was determined as follows:

$$n_{MLI} = (N_{MLI} c_v^2) / (c_v^2 + (N_{MLI} - 1) e^2)$$

$$\text{Therefore } n_{MLI} = (90 * 0.5^2) / (0.5^2 + (90 - 1) * 0.05^2)$$

$$n_{MLI} = 47.6 \sim 48$$

The Sample size for MSIs ( $n_{MSIs}$ ) was determined as shown below:

$$n_{MSI} = (N_{MSI} c_v^2) / (c_v^2 + (N_{MSI} - 1) e^2)$$

$$\text{Therefore } n_{MSI} = (1847 * 0.5^2) / (0.5^2 + (1847 - 1) * 0.05^2)$$

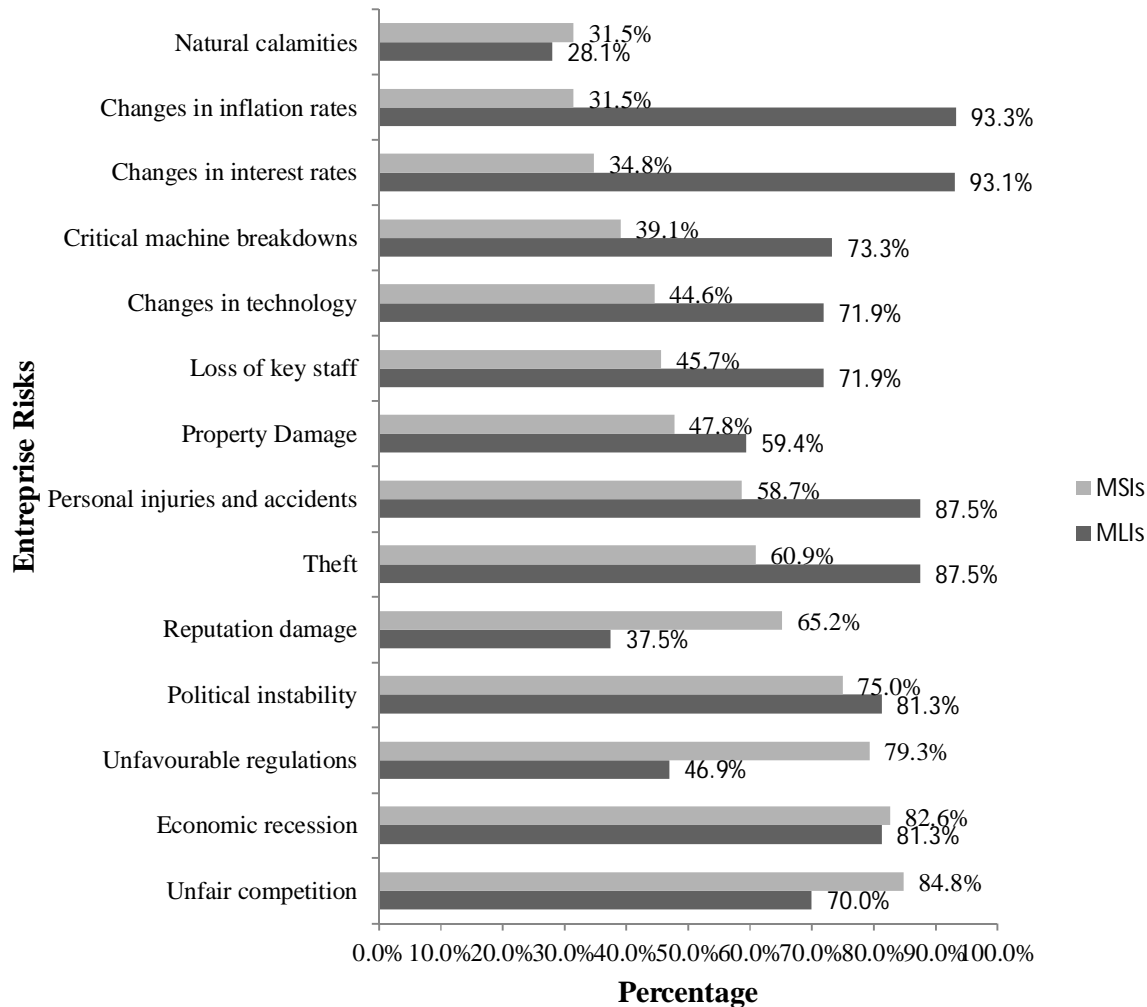
$$n_{MSI} = 95.$$

Therefore the sample size for the study was 143 manufacturing industries comprising of 48 MLIs and 95 MSIs. Primary data was elicited using questionnaires prepared by the researcher and data analyzed descriptively and inferential statistics used.

## Findings and Discussion

### Comparison of Risks Previously Experienced by MLIs and MSIs

Figure 2 presents a comparative plotting of the risks previously experienced by MLIs and MSIs. The number of industries experiencing natural calamities was low in both categories; 31.5% MSIs and 28.1% MLIs. Critical machine breakdowns, changes in technology, loss of key staff, personal injuries, and theft and property damages were more prevalent among MLIs. Reputational damage, unfavorable government regulations and unfair competition were more prevalent in MSIs.



**Figure 2:** Comparison of Risks Experienced By MLIs and MSIs

The results indicate that, risk experienced by the two categories of industries differed significantly for most of the risk factors surveyed. A statistical comparison on the risk experiences by the two categories of manufacturing industries by t-test results indicated that risk experiences were significantly different for: theft, personal injuries and accidents, changes in inflation rates, changes in interest rates, loss of key staff, critical machine breakdowns, reputation damage, changes in technology, and unfavorable government regulations.

Past studies support that the consequence of weak ERM program can lead to huge losses due to disruption in business operations and high costs incurred to mitigate the risks. ERM is geared to address risks that can occur to a business organization such as financial risk, strategic risk and operation risk (Tazhir & Razali, 2010). What has led to high rate of business risks include; complexities of business transactions, advances in technology, globalization and high speed in product life cycles. Similarly, the overall pace of change continues to increase the volume and the scale of risks facing organizations (Beasley, Hancock & Branson, 2009).

Enterprise risk management in Kenya is weak, according to a survey done by Price water house Coopers in Kenya in 2011 on risk, 81% of the chief executive officers (CEOs) interviewed from various firms felt that

risk to their organizations is increasing and traditional risks were evolving (PWC, 2012). Waweru & Kisaka (2011) examined the state of ERM in Kenya and found out that there was positive relationship between firm's size on ERM and financial performance of listed firms in Kenya. According to Deloitte & Touche (2012) traditional risks such as; operational, regulatory and market was rated at 95%, 89% and 83% respectively as the key risks affecting firms in Kenya. This means that ERM framework in Kenya is not effective or is inadequate.

### Comparative Analysis of Likelihood of Risk Occurrence between MLIs and MSIs

A comparative analysis on the rating on the likelihood of risk occurrence was done between MLIs and MSIs and the results are presented on Table 1. The test results indicate that there was no significant difference in projection on the likelihood risk occurrence in the future for nine out of the fourteen risk factors under investigation. These include property damage  $t(122) = -0.325$ ,  $p > 0.05$ , natural calamities  $t(122) = -0.091$ ,  $p > 0.05$ , theft, personal injuries and accidents, economic recession, loss of key staff, unfair competition, political instability and unfavorable government regulations. However, there was a significant difference on rating on the likelihood of risk occurrence for changes in inflation rates  $t(122) = 3.357$ ,  $p < 0.05$ , changes in interest rates, critical machine breakdowns, reputational damage and changes in technology

**Table 1: T-test on Likelihood of Risk Occurrence between MLIs and MSIs**

Risk Factors	t	df	Sig. (2- tailed)	Mean Difference
Property Damage	-.325	122	.746	-.01359
Natural calamities	.091	122	.928	.00408
Theft	-.208	120	.836	-.00797
Personal injuries and accidents	.854	122	.395	.03288
Economic recession	1.335	122	.184	.03750
Changes in inflation rates	3.357	122	.001	.11889
Changes in interest rates	2.621	122	.010	.10326
Loss of key staff	.784	122	.435	.03288
Critical machine breakdowns	2.705	122	.008	.14266
Reputation damage	-3.743	122	.000	-.15842
Unfair competition	-1.909	120	.059	-.07362
Political instability	-1.746	122	.083	-.06114
Changes in technology	3.350	122	.001	.16793
Unfavourable regulations	-.566	120	.572	-.02565

This implies that the likelihood of occurrence of majority of the risk factors in the manufacturing industry was the same regardless of enterprise size. These risks when they occur they do so across the industry. Some internal risk factors such as theft loss of key staff, and property damages by fire and other human causes are equally likely to occur in both categories of enterprises. Technological risks however increase as the enterprise grows and engages more sophisticated technologies. Reputation damages are more common in MSIs due to the nature of their operating environment.

### Comparative Analysis of the Level of Loss

A comparative analysis of the rating on the potential level of loss in the event of occurrence of the risks was done using two independent sample t-tests and the findings presented on Table 2. The t-test results revealed that there was no significant difference in the level of loss experienced by both MLIs and MSIs except for property damage  $t(122) = -1.495$ ,  $p > 0.137$ , theft  $t(122) = -1.055$ ,  $p > 0.293$  and changes in inflation rates  $t(122) = 0.611$ ,  $p > 0.543$ .

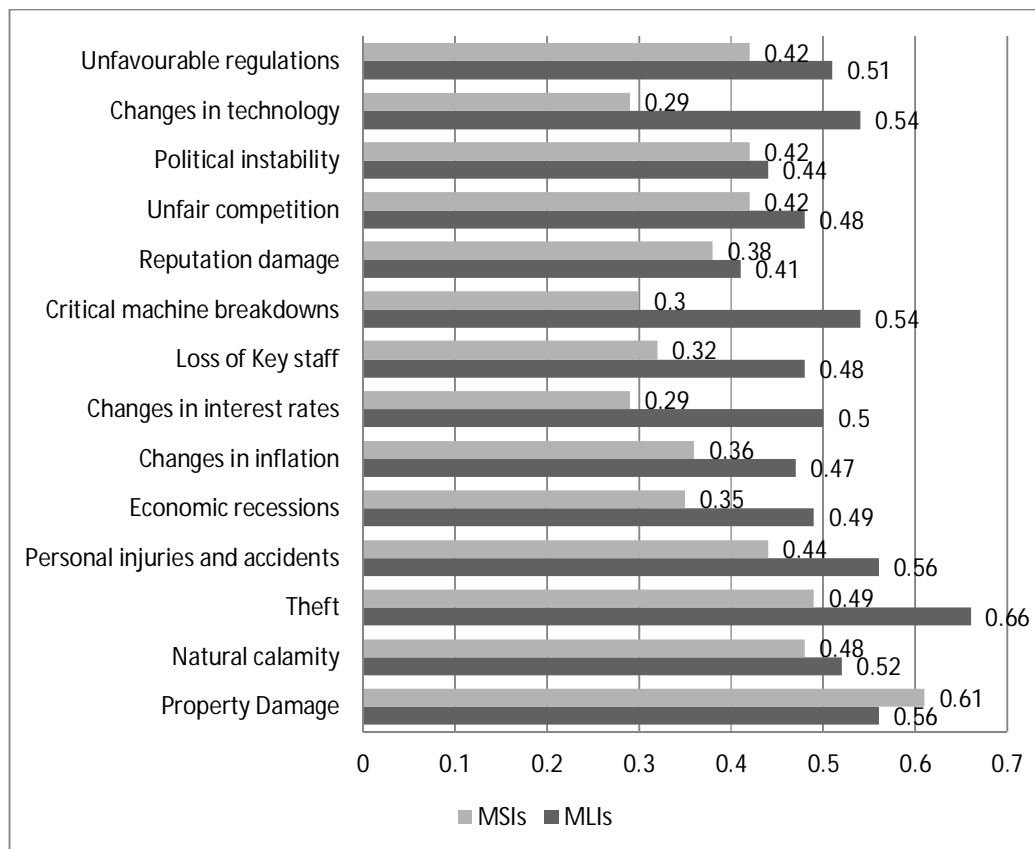
**Table 2: T-Test Results on the Level of Loss**

Risk Factors	t	df	Sig. (2-tailed)
Property Damage	-1.495	122	0.137
Natural calamity	2.108	122	0.037
Theft	-1.055	122	0.293
Personal injuries and accidents	2.221	122	0.028
Economic recession	3.460	122	0.001
Changes in inflation rates	0.611	122	0.543
Changes in interest rates	6.656	82	0.000
Loss of key staff	4.414	122	0.000
Critical machine breakdowns	4.186	122	0.000
Reputation damage	3.610	122	0.000
Unfair competition	2.462	122	0.015
Political Instability	2.278	66	0.026
Changes in technology	4.848	122	0.000
Unfavourable regulations	3.349	122	0.001

This implies that the level of loss is not dependent on the size of the business enterprise. The level of loss in this study was measured in terms of proportion of the entire investment in all enterprises. Total loss in a MLI and total loss in MSI would only vary in monetary value but remain proportionately the same. An MSI who loses all machines and equipments used in production would experience the same level of loss as an MLI who loses all their machines and equipments regardless of their value.

### Comparison on the Level of Risk

To compare the risk levels as identified by the two categories, a comparative plotting of the risk level rating was done to bring out the pictorial view and a t-test to establish their statistical similarity. The pictorial view is shown on Figure 4.



**Figure 3:** Comparison on the Level of Risk by MLIs and MSIs

This implies that there is a difference in the level of risk exposure between MLIs and MSIs.

$$H_{01}: \mu_1 - \mu_2 = 0$$

$$H_{11}: \mu_1 - \mu_2 \neq 0$$

$$\text{At } \alpha = 0.05$$

To test for this, a comparison of the risk exposure was done by comparing the risk level for all risks using two independent sample t-test to determine which risks were experienced the same or differently in these two categories of enterprises. The tests were done at a significance level  $\alpha = 0.05$ . The t-test statistics are presented on Table 3.

The test results revealed that there was no significant difference in the mean rating of seven enterprise risk factors which included property damage  $t(122) = -0.964$ ,  $p > 0.05$ , natural calamities  $t(122) = 0.694$ ,  $p > 0.05$ , changes in inflation  $t(122) = 1.159$ ,  $p > 0.05$ , reputational damages, unfair competition, political instability and unfavorable government regulations. These are all risks emanating from business macro environment. However there was a significant difference in the level of risks between MLIS and MSIs on the following risk factors: theft  $t(122) = 3.343$ ,  $p < 0.05$ , personal injuries and accidents  $t(122) = 2.548$ ,  $p < 0.05$ , critical machine breakdowns, changes in technology, economic recessions, changes in interest rates and the loss of key staff.



**Table 3: T-test Results the Level of Risk by MLIs and MSIs**

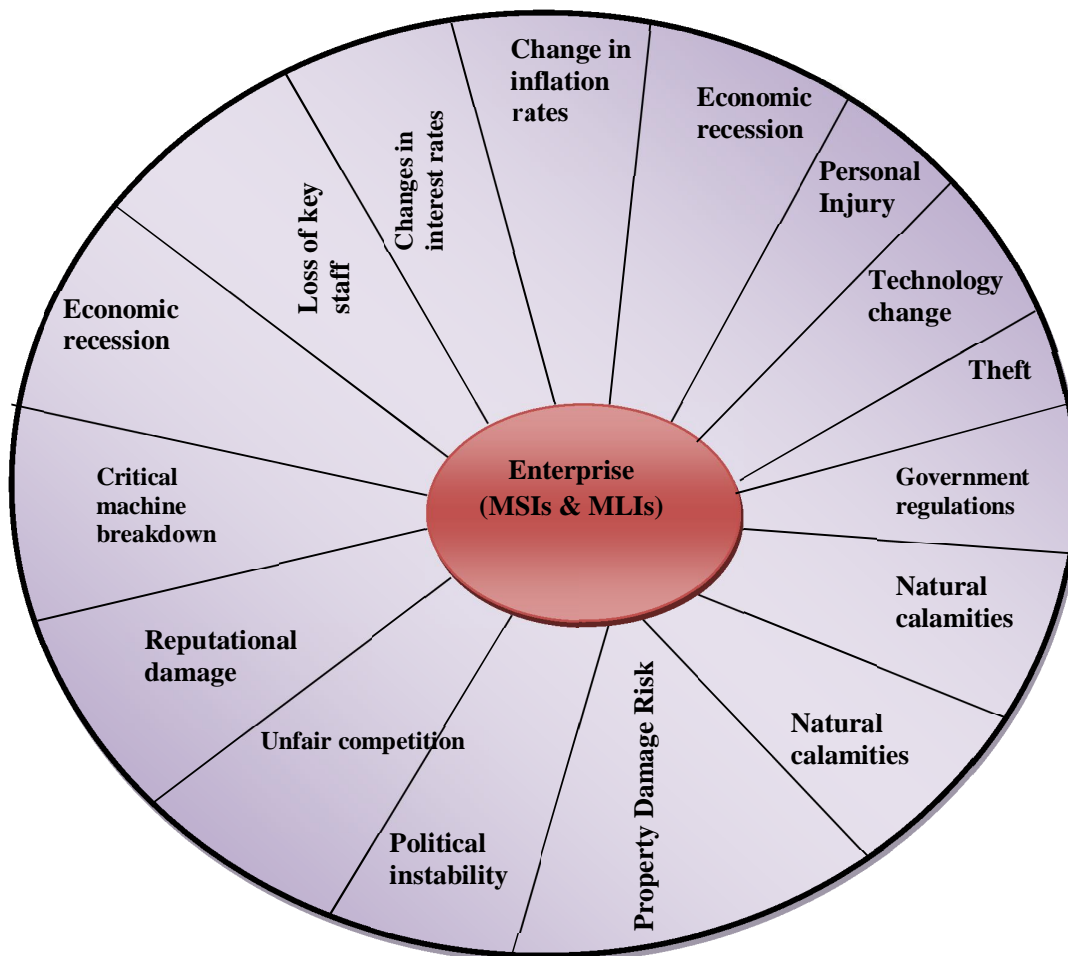
Risk Factor	t	df	Sig. (2-tailed)	Mean Difference
Property damage	-0.964	122	.337	-.04609
Natural calamities	0.694	122	.489	.03582
Theft	2.343	122	.022	.16870
Personal injuries and accidents	2.548	122	.012	.11832
Economic recessions	3.838	122	.000	.13745
inflation	1.159	122	.249	.11024
Changes in interest rates	5.835	122	.000	.20543
Loss of key staff	3.994	122	.000	.16386
Critical machine breakdowns	4.472	122	.000	.23152
Reputational damage	.682	122	.497	.02989
Unfair competition	1.536	120	.127	.06351
Political instability	.463	122	.644	.01793
Changes in technology	5.005	122	.000	.24190
Unfavourable government regulations	1.867	120	.064	.09548

The study therefore rejects  $H_{01}$  and accepts  $H_{11}$ . There is a significant difference in the level of risk experienced in MSIs and MLIs. Majority of the risks experienced from the external business environment were equally experienced in industries across all sizes, these included natural calamities, inflation, political instability and unfavorable government regulations. MSIs were neither more vulnerable nor exempted. However, risks profiles from internal environment varied as the enterprises grew in size. For instance, the number of theft and injuries from industrial accidents were significantly different. Other risks were however from internal or external environment but varied against this theory.

### ***Risk Management Strategies***

Head (2009) defines risk management as the process of planning, organizing, directing and controlling resources to achieve given objectives when good or bad events are possible. Vaughan and Vaughan (2001) consider risk management as a scientific approach to dealing with pure risks by anticipating possible accidental losses and designing and implementing procedures that minimize the occurrence of loss or the financial impact of the losses that do occur. This section sought to establish the basic risk management practices in place for both categories of enterprises, that is, whether there were trainings on risk management, the presence of risk managers and risk management departments. Risk management training among staff of MLIs was present as indicated by 75% who had received the training as opposed to MSIs where 81.5% of owner managers indicated that they had not undergone training on risk management. The findings on presence of risk managers revealed that 61.3% of MLIs did not have risk managers while 94.6% of MSIs did not have. Majority 51.6% of the MLIs had either a department or section dedicated to risk management in their management structure while 96.7% of MSIs did not. According to the Asian Disaster Reduction Center (2005). Risk management guidelines starts by reflecting and clarifying the objectives to be achieved through the implementation of a risk management system. This is echoed by Tatum (2003), who states that at the core of effective risk management strategies is the desire to find ways to manage the degree of uncertainty that exists within any business enterprise. Other risks and strategies were as shown in figure

4.



**Figure 4: Risks facing MSIs and MLIs in Nakuru**

### **Property Damage Risk**

The study indicated that MSIs and MLIs shielded their businesses differently against property damage by perils such as fire which is the most common. A larger proportion of MSIs (50 %) took no action, 28% kept aside savings to replace stocks, 17% had insurance. On the other hand majority (93%) of MLIs had insurance cover for their property. Operational risks frequently are summarized as human risks, due to the discussion that the human error leads to business operations failure. Nevertheless, operational risks include all risks that incur from organizations' internal activities involving people, products or services offered operational systems, and external factors (Global Association of Risk Professionals, 2011).

### **Natural Calamities**

Findings on the mitigation measures taken by industries to cushion themselves against natural calamities revealed that 56% of MLIs have transferred this risk to insurance companies while 44% have taken no action. On the contrary 73% of MSIs have not taken any action, 12% have insurance policies while 16% have savings for self insurance. Nicholas, (2009) supports that the crucial point in risk management is to constantly review the risk identification and assessment processes in order to take appropriate countermeasures against frequent changes in the economic environment, geographic features, social structures, localities, and other factors that may impact negatively on the enterprise. According to Suh (2010) SMEs sector is worst affected by the economic environment and is the first to be hit by any external shock.

### **Theft**

The measures taken by manufacturing industries in Nakuru municipality to cushion themselves against theft includes taking insurance cover. According to the findings 56% of MLIs had insurance against theft in addition to security, 35% had security measures in place. On the other hand, 49% of MSIs had put in place tight security measures, 41% had taken no action while 7% had insurance policies against theft.

### **Personal Injury**

The study indicates that the measures taken by both MSIs and MLIs to cushion themselves against personal injuries and accidents in the course of their duties include the majority of MLIs 66% taking insurance cover against personal accidents and injuries for their staff in addition to observing safety rules, while on the other hand majority 81% of MSIs took no action against personal injuries and accidents in the work place, 4% observed safety precaution. Idemobi (2012) supports that SMEs face a lot of hazard or pure risks. These include personal risks which result from bodily injury to or death of employees while working. Also, property risks which emanate from damage to plants, machineries or other assets use for production. Liability risks which place responsibility of other people's losses on the entrepreneurs and risks that arise from the failure of other people like debtors, suppliers, contractors among others, yet have no strategies in mitigation.

### **Economic Recessions**

Economic recessions are macro environment risks that enterprises have no control over but actions are required to adjust internal business environment to ensure that the business is less vulnerable to economic risks. The findings indicate that majority (88%) of MLIs and 97% of MSIs took no action to cushion themselves against future economic recessions. Suh (2010) posits that the SMEs sector is worst affected by the economic environment and is the first to be hit by any external shock. This implies that SMEs are weak in terms of business plan, management structure and in decision making (Kelkar, 2008).

### **Changes in Inflation Rates**

Findings on the strategies adopted by both MLIs and MSIs to cushion their businesses against the risk of changes in inflation rates show that, majority 94% of MLIs have done nothing to cushion themselves while 6% cited to have diversified to non-fluctuating securities. All MSIs reported to have taken no actions at all to militate against inflation in their businesses. This disregards Raghavan (2005) suggestion that, a company can protect itself against possible threats by being aware of its most vulnerable areas and the factors that affect its operations. According to the Institute of Occupation Safety and Health (2002), identifying hazards and assessing risks are the first stages of risk management. An examination of a company's vulnerability quickly provides a rough picture of difficult-to-manage threats related to the company's operations. Identifying hazards and assessing their severity makes it easier to plan risk management control measures.

### **Changes in Interest Rates**

Findings on strategies adopted by manufacturing enterprises in Nakuru Municipality to cushion themselves against changes in interest rates revealed that 94% of MLIs and 99% of MSIs have done nothing. This is as expected. Kelkar (2008) posits that SMEs are weak in terms of business plan, management structure and in decision making when compared to large organizations. This further increases SMEs' inability to absorb most business uncertainties and risks. Many SMEs and micro companies do not possess a sufficient cash flow plan. They rely heavily on ongoing operations to generate funds for the continuous activities. In bad

circumstances where the need for funds is not well planned and cash generation does not follow forecast, the business will run low on budget and might be stuck for the next upcoming projects. Operations from this point might turn into dead end.

#### **Loss of Key Staff**

Manufacturing industries surveyed cited various strategies employed to cushion their businesses against the effects of loss of key staff. The findings indicated that 47% of MLIs invest in training more staff, while 16% have key man insurance for their businesses. On the other hand 94% of MSIs do nothing, while 3% train more staff. Studies by Singapore Government (2012) and the Institute of Chartered Accountants in England and Wales (Alpa, et al. 2005) coincidentally prove that the most significant risk among small businesses involves human factor. High degree of employee turnover and shortage of know-how and experts, both result in wastage of manpower and additional cost of training. In long term, human factor will lower the productivity and affect the brand image of small businesses as an employer.

#### **Critical Machine Breakdowns**

Findings on the strategies adopted by MLIs and MSIs to cushion themselves against the risks of critical machine breakdowns indicate that while 45%, of MLIs had efficient maintenance system, 13% had insurance cover while 13% had standby machines. Majority 81% of MSIs had no measures in place while 16% performed regular maintenance and servicing of their machines.

#### **Reputational Damages**

The strategies adopted by MSIs and MLIs in cushioning themselves against reputation damages vary. The findings show that, majority of MLIs 68% do nothing while 14% maintain good customer relations, similarly majority of MSIs 87% take no action while 9% maintain good customers relationships, to cushion themselves from reputational damages.

#### **Unfair Competition**

The findings on strategies adopted by manufacturing enterprises in Nakuru municipality to cushion themselves against unfair competition indicate that most of MLIs 41% had put no measures in place, 22% ensured that they offered high quality goods while 19% had aggressive marketing strategies. Majority 81% of MSIs put in place no measures while 8% relied on good customer relationships.

#### **Political Instability**

The findings revealed that despite the previous experiences of political violence in the country, 88% of MLIs and 100% of MSIs have not taken any action at all to cushion their businesses.

#### **Changes in Technology**

On the actions taken by manufacturing industries in Nakuru Municipality to cushion themselves against technological changes, the majority of the MLIs (53%) used regular technology upgrading strategy to remain at par with technology while 41% did nothing, on the other hand majority of MSIs 78% did not take any action while 21% did regular technology upgrading to cushion from obsolescence as a result of technological changes.

### **Unfavorable Government Regulations**

On strategies adopted by both MLIs and MSIs to cushion themselves against unfavorable government regulations, the majority, 78% of MLIs indicated that they did nothing, 19% were members of manufacturers associations who advocate for the rights of manufacturers, while 3% just complied with the existing laws. On the other hand, 88% of MSIs did nothing, 3% were members of associations who advocate for their rights as small scale manufacturers, while 8% complied with all laws.

### **Implications of Findings**

MSIs experience more calamities, economic recession, reputation damage, unfavorable regulations and unfair competitions than MLIs. However, MLIs are faced by inflation rates, change in interest rates, and critical machine break down, loss of key staff, theft and political instability more as compared to MSIs. According to Sensarma & Jayadev, (2009) changes in interest rate affect earnings, value of assets, liability off-balance sheet items and cash flow. Hence, the objective of interest rate risk management is to maintain earnings, improve the capability, ability to absorb potential loss and to ensure the adequacy of the compensation received for the risk taken and affect risk return trade-off. Management of interest rate risk aims at capturing the risks arising from the maturity and re-pricing mismatches and is measured both from the earnings and economic value perspective (Sensarma & Jayadev, 2009).

On performance, Enterprise Risk Management helps ensure effective reporting and compliance with laws and regulations, and helps avoid damage to the entity's reputation and associated consequences. It delivers a current, credible understanding of the risks unique to an organization across a broad spectrum that includes all types of risk (credit risk, operational risk, market risk, liquidity risk and trading risk), lines of business and other key dimensions (SAS, 2014). In sum, Enterprise Risk Management helps an entity get to where it wants to go and avoid pitfalls and surprises along the way (Nocco & Stulz, 2006).

Risks occurrence likelihood is the same regardless of whether the industry is MLIs or MSIs and they occur across the industry. Technological risks however increase as the enterprise grows and engages more sophisticated technologies. Reputation damages are more common in MSIs due to the nature of their operating environment. Most literature on risk management assesses the value of risk management based on how institutions manage their financial risks using derivatives to hedge, and conclude for or against the value adding ability of risk management. However, there is very little research on how the integrated approach to risk management (ERM), taking into account both financial and non-financial risk management activities, would have an effect on companies, in particular in emerging markets. Besides that, there seems to be limited research on factors associated with the implementation of ERM and how these factors affect the level of ERM implementation in companies in different markets (Pagach & Warr, 2010).

From the study results there were no significant difference on levels of risks expected in MSIs and in MLIs. Kleffner et al. (2003) suggests that larger firms would be more likely to adopt ERM because of the need for a more comprehensive risk management strategy. Hoyt et al (2008) also studying the value of Enterprise Risk Management in the US insurance industry suggests that ERM usage is positively related to firm size. The larger the organization, the more complex its operations will probably be and the more its exposure to threatening events. Besides that, the larger the organization, the more resources it will probably have to implement a more comprehensive ERM program. Waweru & Kisaka (2013) examined the effect of ERM implementation on the value of 20 companies listed on the Nairobi Securities Exchange in 2011. A survey was carried out where ERM was measured using the level of implementation while firm value was measured



using Tobin Q. The results showed that there was a positive relation between level of ERM implementation and firm value (Waweru & Kisaka, 2013).

The firm loss is not dependent on size of an enterprise since the loss was measured in terms of proportion of enterprise entire investment in all the enterprises. Total loss in a MLI and total loss in MSI would only vary in monetary value but remain proportionately the same. An MSI who loses all machines and equipments used in production would experience the same level of loss as an MLI who loses all their machines and equipments regardless of their value. High degree of employee turnover and shortage of know-how experts both result in wastage of manpower and additional cost of training. In long term, human factor will lower the productivity and affect the brand image of small businesses as an employer.

Undesirable events which lead to negative impact on business operations are numerous to list down and not all risks will fit into merely one category. Risks towards SMEs and micro companies can be categorized by the sources of risks as well: risks posed by customers, risks posed by suppliers, risks posed by staff, etc (CPA Australia, 2009). It is important to identify and manage risks to minimize or eliminates any loss threats. Most of the MSIs and MLIs have minimal strategies in place to cushion themselves against risks that face their enterprises. The strategies in place were either not very effective or cannot cover or manage the risks fully. According to Beasley, et al., (2005) risk management has emerged as a new paradigm for managing the portfolio of risks that face organizations, and policy makers continue to focus on mechanisms to improve corporate governance and risk management.

According to Sensarma & Jayadev (2009), avoidance may seem the answer to all risks but avoiding risks also means losing out on the potential gain that accepting the risk may have allowed. Risk abatement is the process of combining loss prevention or loss control to minimize a risk. It is also called risk reduction or risk optimization. Risk allocation is the sharing of the risk burden with other parties for example asset allocation to various asset classes i.e. equity, bonds, real estate, private equity, hedge funds, etc. Risk retention is a good strategy but it is impossible to transfer the risk. Defined benefit pension schemes are a good example of risk retention. Beasley, Clune, & Hermanson (2005) empirically show that there is a significant positive relationship between the presence of a CRO and the ERM implementation stage, thus providing support for the proxy used in the empirical studies. More recently, indices have been introduced as methods of measuring how firms manage risks. For instance, Pooser (2012) uses a modified HHI to measure diversification as a method of managing operational risk, portfolio variance to measure financial risk, re-insurance use to measure hazard risk, and aspiration to measure strategic risk.

Risk management for a business of any sizes relates to systematically assessment and strategic response to threats. By their nature, small business owners are frequently entrepreneurs, successful and optimistic entrepreneurs. They have the tendency to be confident based on their success in establishing and leading the business, and it might be common for small business owners to put risk management plans down the list of priorities. A research by the Institute of Chartered Accountants in England and Wales (Alpa, et al. 2005) show that expenditures for risk management of smaller businesses are considerably less than larger businesses. SMEs generally spend their budget on insurance and internal – external audits.

There are several approaches that SMEs and micro companies can choose to process risk management and reduce loss exposures. Kliem et.al (1997) prefers a four-step process: risk identification, risk analysis, risk mitigation and risk follow-up. A more common process is described by Candice Lim, (2010) with five-steps.

## **Conclusion**

There is a significant difference in the risks facing MSIs and MLIs in Nakuru Municipality; the risk management practices adopted by MSIs are significantly different from those adopted by MLIs. In Regards to management the inflation, changes in interest rates, theft and personal injuries were the most experienced risk factors among MLIs while unfair competition, economic recessions, unfavorable government regulations and political instability were the most experienced risks in MSIs. Based on previous experiences by manufacturing enterprises, the risk exposure was significantly different between MLIs and MSIs. However, similarities were observed in the risk exposures between the two categories of enterprises for risks stemming from the external business environment such as natural calamities, inflation political instability and unfavorable government regulations. Risks from internal business environment varied significantly.

Majority of MSIs have not put in the basic risk management initiatives in place such as training staff on risk management, having risk management personnel and structures in place as opposed to MLIs who showed an organized and functional risk management structures and systems in place. The comprehensiveness in risk management practice among MSIs was significantly low compared to MLIs. Most of the MSIs took no actions on majority of the risks studied as opposed to MLIs who have risk management actions against majority of the risks in question. The most common risk management practice applied by MSIs was self insurance where the enterprises put aside some funds to reinstate their operations in case of a risk occurrence. On the other hand, MLIs preferred to transfer risks to a third party that is insurance companies especially where the risk involved capital losses. Risk reduction strategies were employed across all the industries. The measures taken by MSIs and MLIs to cushion themselves from risks stemming from internal environment varied significantly while those for managing external risks were significantly similar.

## **Recommendations**

It is recommended that;

- i. Both MSIs and MLIs should be enlightened to develop an enterprise risk profile encompassing all the potential risk the magnitude and likelihood of occurrences in order to put in the right prevention and mitigation measures.
- ii. As manufacturing enterprises grow in size and technology, the risk profiles change. This is a factor that MSIs should be wary of in planning for growth from one stage to the other. MSIs should therefore keep on scanning both internal and external environment for risks.
- iii. MSIs should consider developing an organized risk management framework workable in their own small way in order to respond to emerging risks which are a challenge to enterprise performance, survival and growth.
- iv. Owing to the better risk management practices in MLIs, a mentorship program should be developed through which MSI owners and managers can be attached to MLIs to borrow experiences on how to manage their own risks.

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