



## **Determinants of Enterprise Risk Management (ERM) Implementation in Selected Enterprises in the Southern Highland Zone**

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### **Abstract**

The study assessed the determinants of Enterprise Risk Management Implementation in Selected Enterprises in the Southern Highland Zone. The study specifically focused on enterprise size, capital invested, enterprise ownership, enterprise products/service offered, their influence on ERM implementation. Using mixed research methods, questionnaires and an interview guide were used to obtain primary data from selected companies. The research design employed was correlation design. Data were then analyzed using descriptive (frequencies and percentage) and inferential (regression analysis) statistics. Findings reveal that Environmental risks (22%), unpredictable changes, health risks (17%), credit risks (15%), market risks (11%) were the major perils facing firms. Regarding the influence of the nature of products or services provided by a firm on ERM, a weak positive correlation value ( $r = 0.062$ ,  $p = 0.543$ ) was established, which indicates a weak relationship between products/services offered and the implementation of ERM. A high positive relationship correlation was also revealed between enterprise size and capital invested in ERM implantation. Lastly, there was a negative relationship between firm ownership and ERM implementation. It was therefore recommended as per study findings Management should ensure prompt implementation of ERM activities in organizations by recruiting competent finance and resource managers. Employee training programs should be conducted by risk management consultants and not directorate managers. Also, the government should develop policies that compel firms to implement risk management measures. A holistic ERM structural framework that clearly defines implementation standards for all firm categories should also be established.

**Keywords:** Risk, Enterprise risk management, Capital, Firm size and firm ownership

## **1. Introduction**

Risk management is best understood through its history as the period from World War II to the mid-1960s was a formative one, characterized by burgeoning enterprise and creativity on the part of business people, inventors and lawyers. The risks of the time were mainly aggravated by the poor risk managers' response to them however; the risk management function has greatly evolved over the years. When insurance was used by corporation management only for financing certain losses, the contract was bought and administered by a member of the finance staff known as the insurance buyer. As loss exposures increased, insurance buyers developed skills in patterning and administering contracts. This requires more cooperation from other departments thus; insurance buyers used more descriptive and the upscale title "insurance manager" to solicit for the cooperation they required (Manab and Kassim 2012). As the enterprise steadily expanded and diversified, insurance managers expanded their duties by examining company operations for serious uninsured risks and loss prevention opportunities, suggesting changes in operations to avoid risks, recommending hold-harmless clauses in certain contracts, obtaining deductibles and declining to insure some bearable risks.

In 1955, insurance managers' focus was not on risks and how to control the same but rather on the mere purchase of insurance. Gustavasson (2006) introduced the term risk management to business organizers. Some purists suggested that the term risk manager mostly suited chief executive officers (CEOs) although CEOs lacked interest in the same. However, the term was so impressive that various outsiders claimed that stockbrokers, investment counsels, physicians, boards of health or lawyers were also risk managers (Ranon, and Phuenngam, 2009).

According to Manab and Kassim (2012) the successful implementation of risk management requires a well-established risk management culture. Kleffner and Mc Gannon (2003) suggested that the undertaking of enterprise risk management is likely to be frustrating if risk management is isolated from the corporate culture. It is hence important that all individuals take part in effecting a company's risk management strategy and implementation, rather than leaving the responsibility to be solely shouldered by the risk management department. Ranon and Phuenngam (2009) observe that shareholder value and corporate governance are the most important drivers in risk management implementation.

The need for ERM is strongly supported by the Central Bank of Nigeria (2012) who observes that risk management is not only at its rudimentary stages in African companies but also faces several challenges. These challenges include poor knowledge of risk management by members of the board of many banks

and lack of professionals and ineffective monitoring mechanisms. Others are lack of risk training and education and lack of a framework that supports the development of skilled and capable workers in the industry (Sanusi, 2011; 2010). Sanusi (2010) found that in the recent past, excessive credits and unwarranted growth in financial assets went unchecked thus; managing risk can no longer be regarded as an option but a necessity for enterprises.

Previous scholars in risk management such Dough (2018) revealed that ERM implementation varies across industries and ERM were mainly common in infrastructure, hotels and technology related firms. Pagach and Warr (2010) asserted that ERM is common in financial and insurance companies. Golshan and Rasid (2012) contradict the above findings as they revealed the drive ERM is guided by enterprise size as large firms are more likely to actively implement risk management compared to smaller firms. Gordon et al (2009) clarified that complex firms are more likely to implement the ERM. Based on the divergent views on what determines ERM implementation. It is upon such a background that this current Study assessed the determinants of enterprise risk management implementation in selected enterprises in the Southern Highland Zone.

## **2. Literature Review on Risk Management**

Dough (2018) in his study titled "Top three industries that implement risk management" in the USA used the descriptive cross-sectional design and descriptive statistics such as mean and frequency to analyze the data. The major implementers of risk management were found to be financial institutions, Energy & Utilities and Healthcare. Moreover, Soltanizahed et al (2014) examined "Enterprise Risk Management Practices among Malaysian Firms". Data were gathered from 199 firms listed on the Malaysian Bursa through a questionnaire survey. Study findings reveal that ERM implementation varies across industries and that ERM frameworks were mainly common among infrastructure, hotel and technology related firms. Pagach and Warr (2010) studied "On the characteristics of Firms That Hire Chief Risk Officers" in the USA. 138 firms informed the study and data were analyzed using frequencies, mean and standard deviations. The multivariate analysis (Multiple Linear Regression) was also used and findings revealed that firms operating cash flow volatility like financial and insurance companies are more likely to implement Enterprise Risk Management owing to the level of risks expected. More recently, Pagach and Warr identified other firms which implement risk management including; infrastructure, energy and utilities. Colquit, Hoyt and Lee (1999) also studied "Integrated Risk Management and the Role of the Risk Managers" in German. One Hundred and thirteen companies participated and a qualitative cross-sectional

design was used alongside descriptive statistics like frequencies and percentages. It was revealed that ERM was common in particular industries like finance and healthcare.

Pagach and Warr, (2011) conducted a study titled "Why do firms adopt enterprise risk management" Empirical Evidence from France. The study was qualitative in nature and data was obtained through a nomothetic literature review. Study findings were presented according to themes and revealed that intensive-regulated industries are more likely to adopt ERM and were at the forefront of ERM implementation. Regulated industries include; financial and energy firms. Moreover, industry competition is a fundamental concern for all organizations as the majority provides similar services/products thus competitor services/products are a substitute for other firms' services/products. These industries are referred to as competition-intensive and firms operating in them face substantial risks of unsustainable profits. Some firms however operate in a monopolistic situation with a relatively low risk of unsustainable profits levels, as long as there is a consistent demand for their products/services.

Gordon, et al., (2009) studied "Enterprise risk management and firm performance: A contingency perspective" in 112 US industries. Linear regression was used to analyze data in the qualitative study and it was found that firm complexity was a major ERM determinant. This implies that firms with numerous business segments were considered complex as diversified firms normally face multifaceted risks. Both Gordon (2009) and Pagach and Warr (2011) found that complex firms are more likely to implement the ERM concept thus; reviewed literature depicts a positive relationship between the nature of enterprise and ERM implementation.

Staniee (2011) assessed the "Factors that Determine the Functioning of Risk Management Systems" in Kenya using risk managers from 40 organizations, purposefully selected through snowball sampling and subjected to a standardized interview. The sample group was composed of a small, medium, and large organizations: trading, service providers, or belonging to the public sector – education, administration, as well as production companies. Data were analyzed descriptively and findings reveal that the primary barrier to the proper functioning of risk management systems in organizations among others is the limited resources of small firms in comparison to their larger counterparts thus; large firms have adequate resources for ERM.

Liebenberg and Hoyt (2003) examined "The Determinants of Enterprise Risk Management: Evidence from the Appointment of Chief Risk Officers" the University of Georgia. The study based their work on the appointment of the CRO, who is responsible for the implementation and management of the ERM to

determine the determinants of ERM use. A logistic regression framework was used to compare these firms to size- and industry-matched control sample. In the study, it was determined that size and leverage are major determinants of ERM applications. Gallagher (2015) analyzed "Determinants of ERM maturity" in the 2006-2011 periods in Turkey" 231 observational values were obtained from a sample of 33 firms in 2006-2011 in Panel data analysis and confirmed that size was an ERM determinant.

Hoyt et al., (2008) assessed "The value of Enterprise Risk Management" in the USA. The study focused on the US insurance industry and revealed that ERM use is positively related to firm size owing to relatively high complexity and greater risk potential and their institutional size enables them to bear the administrative cost of ERM adoption. It was observed that the larger the organization, the more complex its operations will probably be and similarly greater exposure to threats. Furthermore, the larger the organization, the more resources it will probably have to implement a more comprehensive ERM program.

Liebenberg and Hoyt (2003) examined "The Determinants of Enterprise Risk Management: Evidence from the Appointment of Chief Risk Officer" in Georgia. A logistic regression framework was used to compare firms' sizes using an industry-matched control sample. It was observed that firms with greater financial leverage benefit more from reduced volatility earnings as they manage their risks in an enterprise-wide fashion. The implementation of an ERM program requires a substantial initial investment, and firms with higher levels of capital or lower levels of leverage may find it easier to start a new ERM program. To capture any possible effect of leverage on firms' ERM adoption decisions, the model should include the ratio of the total book value of liabilities to the market value of equity as a measure of firm leverage. It was further found that implementing an ERM program is a challenging task that requires substantial resources, which may prove impossible if a company is involved in merger and acquisition (M&A) activities.

Beasley et al., (2005) studied "Enterprise risk management: an empirical analysis of factors associated with the extent of implementation" in the USA. A qualitative study using a homothetic literature review, and found that the presence of a Chief Risk Officer, board independence, managerial involvement, firm size and auditor type were significant to ERM implementation. It was further found that companies with a higher proportion of non-executive directors are more likely to purchase the monitoring of directors' and officers' insurance compared to boards with a lower proportion non-executives. This suggests that companies with greater non-executive representation may favor a more comprehensive control, risk management and internal or external) audit.

Paape and Speklé, (2012) examined “The Adoption and Design of Enterprise Risk Management Practices: An Empirical Study” in Canada. A survey questionnaire was used to obtain data that was analyzed quantitatively using mean, frequencies and percentages. Listed firms were revealed to have more developed ERM systems than non-listed organizations, in as much as they are hindered by the absence of a common framework for their adoption.

Mafrolla and Matozza, (2014) studied “Enterprise Risk Management in Private Firms: Does Ownership Structure Matter in Italy. The survey involved 78 respondents and investigated the adoption of ERM practices in Italian private corporations. The study revealed that the majority of private firms lacked the tendency to implement ERM practices and as such, the use of quantitative techniques for risk identification and measurement, the enrollment of a professionally qualified risk manager or chief risk officer or the settlement of a dedicated risk management department. Arena and Azzone (2009) in a study titled “Identifying Organizational Drivers of Internal Audit Effectiveness” in Milan Italy, involved 153 Italian companies and found that the poor implementation of ERM in non-listed companies was attributed to the low priority it was given. These firms are often unable to hire employees with the necessary expertise, technical knowledge and availability for training: all of which are factors that foster ERM capabilities.

Based on the literature, there are divergent views on what determines ERM implementation. It is upon such a background that this current Study assesses the determinants of enterprise risk management implementation in selected enterprises in the Southern Highland Zone.

### **3. Methodology**

The study was conducted in Southern Highland Zone specifically in Mbeya, Iringa and Njombe regions. The study was a mixed study dominated by quantitative and qualitative was used to supplement the quantitative findings. The population of study was 340 and the sample size was 100 companies. Data were collected using a structured questionnaire and interview guide. Analyses were done using descriptive and inferential statistics for quantitative data and content analysis for qualitative data. Validity and Reliability of findings were enhanced through pilot testing.

**4. Results and Discussion**

**4.1. Effect of Enterprise Product on ERM Implementation**

Regarding the influence of firm products or services on ERM implementation, the researcher ran a regression test and found less influence of enterprise products in the implementation of ERM as the value ( $r = 0.062$ ,  $p = 0.543$ ), which is above the cut-off point of less than 0.05. This perhaps is attributed to sectors such as financial institutions, which are faced several risks to include; cybercrime, reputation, economic slowdown, regulatory/legislative changes, competition, failure to innovate, disruptive technologies, political risks and interruptions, commodity price risks, third party liability risks which leave regulatory authorities and financial institutions no choice but to embark on close monitoring.

**Table 1.** Effects between products on implementation of ERM

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	10.857	1.278		8.494	.062
Products offered	.007	.090	.008	.077	.543

a. Dependent Variable: Enterprise Risk Management Implementation

**Source:** Field data (2021)

Today, risk management remains at crossroads as financial institutions are yet to decide if they will continue with business as usual or fundamentally rethink their approach to risk management. With increased regulatory expectations and emergent technologies, the future of risk management will look dramatically different than the current risk capabilities many are familiar within this sector. Tupa, Simota and Steiner (2017) similarly found that in Switzerland, industries were forced to implement ERM owing to the nature of service and products they produced, the study identifies leading ERM implementing sectors to include; financial institutions, infrastructure, management and technology.

**4.2. Effects of Enterprise Size on ERM Implementation**

On the influence of enterprise size on ERM, a regression test was taken and a strong influence was obtained between enterprise size and implementation of enterprise risk management value ( $r = 0.0834$ ,  $p = 0.000$ ) was obtained. This implies that larger firms are more likely to implement ERM in comparison to their much smaller counterparts. Findings are as depicted on Table 2.

**Table 2.** Effects of enterprise size and implementation of ERM

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	10.857	1.278		8.494	.000
Enterprise size	.007	.090	.008	.077	.0834

a. Dependent Variable: Enterprise Risk Management Implementation

**Source:** Field data (2021)

Waweru and Kisaka (2012) similarly found that larger firms have complex operations that expose them to numerous threats. ERM has the potential to provide organizations with competitive advantages that large firms can use to initiate strategies to build synergies that translate to cost advantages, differentiation and focus. Golshan and Rasid (2012) similarly caution that it is critical to consider firm size before making ERM implementation decisions. Lassar et al (2010) examined the determinants of strategic risk management in emerging markets, and findings show that firms endowed with resources and networks were more likely to implement strategic risk management.

#### **4.3. Effects of Capital Invested on ERM Implementation**

Regarding the effects of capital structure on enterprise risk management, a regression analysis was computed and results depict that there is a strong influence on capital invested on ERM implementation as the ( $r=0.280$ ,  $p=0.002$ ) as the p value is less than the cut-off point of 0.05. This is probably attributed to the fact that larger firms with less asymmetric information problems tend to have more equity than debt and thus lower leverage. However, larger firms are often more diversified and have a more stable cash flow; the probability of bankruptcy is also higher among large firms in comparison to smaller ones, *ceteris paribus*. Both arguments suggest that capital size is positively related to leverage. Moreover, smaller firms acquire lower debt owing to the risk of liquidation during financial distress.



**Table 3.** Effects of capital invested on ERM implementation

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	10.857	1.278		8.494	.0280
Capital invested	.007	.090	.008	.077	.0002

a. Dependent Variable: Enterprise Risk Management Implementation

**Source:** Field data (2021)

Liebenberg and Hoyt (2003) recommend that firms with greater financial leverage should benefit more from reduced volatility earnings by managing their risks in an enterprise-wide fashion. The implementation of an ERM program also requires a substantial initial investment, and firms with higher levels of capital or lower levels of leverage may find it easier to initiate such programs. Mary et al. (2011) recent work on the actively listed Egyptian corporations, the findings of the estimated model and other tests confirm the existence of a significant positive relation between the firm size and the debt-equity ratio. These findings support other empirical studies conducted worldwide, and the notion that large firms employ ERM because these are less risky and diversified in nature.

#### 4.4. Effects of Enterprises Ownership on ERM Implementation

The current study also investigated the relationship between firm ownership and ERM adoption thus; the computed regression output value ( $r = -.229^*$ ,  $p=361$ ) indicated a negative influence between the implementation of ERM and firm ownership. Literature suggests a policy that compels private firms to adopt ERM implementation, is yet to be passed as most private entities adopt ERM practices (if any) voluntarily; public firms, are however compelled to adopt generally acceptable standards of ERM. Contrary to these findings however, Paape and Speklé, (2012) found that listed firms have more developed ERM systems than their non-listed counterparts, although they are hindered by the absence of a common framework for their adoption. Mafrolla & Matozza, (2014) revealed that there is no tendency by private firms to implement ERM practices, such as the use of quantitative techniques for risk identification and measurement, the enrolment of a professionally qualified risk manager or chief risk officer or the settlement of a dedicated risk management department.

**Table 4.** Effects of firm’s ownership on ERM implementation

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	10.857	1.278		8.494	.2290
Firm ownership	.007	.090	.008	.077	0.361

a. Dependent Variable: Enterprise Risk Management Implementation

**Source:** Field data (2021)

### 5. Conclusions

Regarding the influence of firm products or services on ERM implementation, the study conclude that there is less influence of enterprise products in the implementation of ERM and this is due to risks such as cybercrime, reputation, economic slowdown, regulatory/legislative changes, competition, failure to innovate, disruptive technologies, political risks and interruptions, commodity price risks, third party liability risks which leave regulatory authorities and financial institutions no choice but to embark on close monitoring. The study also concludes that there is strong influence between enterprise size and implementation of enterprise risk management value as larger firms are more likely to implement ERM in comparison to their much smaller counterpart. Moreover, the study concludes that there is a strong influence on capital invested on ERM implementation. This is probably attributed to the fact that larger firms with less asymmetric information problems tend to have more equity than debt and thus lower leverage. However, larger firms are often more diversified and have a more stable cash flow; the probability of bankruptcy is also higher among large firms in comparison to smaller ones, *ceteris paribus*. Lastly the study concludes that there is a negative influence between the implementation of ERM and firm ownership.

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