



**British Journal of Economics, Management & Trade**  
4(10): 1544-1554, 2014

SCIENCEDOMAIN international  
[www.sciencedomain.org](http://www.sciencedomain.org)



---

# The Perception of ERM in the Zimbabwe's Short Term Insurance Industry: A Case for Bulawayo Metropolitan City

B. W. Mazviona<sup>1</sup>, N. Chiranga<sup>2\*</sup> and S. Zhanje<sup>3</sup>

<sup>1</sup>Insurance and Actuarial Science, National University of Science and Technology, P.O Box AC 939, Ascot, Bulawayo, Zimbabwe.

<sup>2</sup>Department of Economics, Tshwane University of Technology, P Bag X9496, 0700 Polokwane, South Africa.

<sup>3</sup>University of Limpopo, Economics Department, P Bag X1106, Sovenga, South Africa.

## Authors' contributions

*This work was carried out in collaboration between all authors. Author BWM came up with the concept and the literature sources working hand in hand with author SZ. Author NC did the statistical analysis and interpretation of the data. All authors read and approved the final manuscript.*

Original Research Article

Received 20<sup>th</sup> March 2014  
Accepted 7<sup>th</sup> May 2014  
Published 5<sup>th</sup> June 2014

---

## ABSTRACT

The study was carried out to establish the perception of Enterprise Risk Management (ERM) by short-term insurance companies in Zimbabwe's second capital city, Bulawayo. The Zimbabwean insurance companies have not adopted ERM despite the benefits that this holistic approach to risk management offers. The research instrument used was a closed questionnaire with a Likert five point scale on a sample of 35 short term companies in and around Bulawayo. The questionnaire sought to gain an insight on the perceptions on ERM from the short term insurance industry. The survey explored perceptions on the factors which could influence the short term insurance companies to adopt ERM, the benefits to be acquired by the companies that implement ERM, and the challenges that the companies are likely to encounter in their efforts to implement ERM. The results of the survey revealed that short term insurers perceive that ERM will bring benefits to their companies, and acknowledge that efforts towards finally adopting ERM will be influenced by both internal and external forces such as shareholder considerations. The short term insurers also acknowledge that there are challenges that may hinder their implementation efforts.

---

\*Corresponding author: Email: [chirangan@tut.ac.za](mailto:chirangan@tut.ac.za);

*Keywords: Zimbabwe; ERM; short term insurance; traditional risk management.*

## **1. INTRODUCTION**

In the last decade, there has been a radical alteration of the insurance operating business environment. At present, insurers face growing competition, more challenging stakeholders and more capital pursues too little business. According to [1] the insurance industry is progressing with dynamic transformation in technology, distribution systems and customer expectations that produce new risks and challenges high performance. The Zimbabwean insurance companies are emerging from a decade - long crises that was ended by the dollarization in 2009. Although dollarization brought some stability to the whole economy, it also brought about some challenges, which have also affected the insurance industry. Dollarization brought about a liquidity deficit in the market resulting in players experiencing recapitalisation challenges, limited investment options and inability to attract foreign investment to inject new capital and low disposable incomes resulting in shrinkage of the market. The result of the challenges was that the number of people who could afford to pay premiums was reduced. As a result there is increased competition which has placed downward pressure on premiums, leading to low margins. Claims have been soaring while premiums have softened thus creating an unsustainable business model. Risk management has always been at the heart of insurance companies operations; however the complexity of risks now, has called for a more efficient mechanism of managing company risks. A new risk management concept which has gained popularity is Enterprise Risk Management (ERM). ERM has emerged to address the risk management challenges faced by insurance companies and other business enterprises. Organizations in all industries are looking to insurance companies to help them meet their own ERM challenges, whether the need is sophisticated risk assessment, risk modelling, risk mitigation, or risk financing, the financial services industry is assumed to be more knowledgeable. A financial institution that can demonstrate that it has, in fact mastered ERM internally will make itself more credible in the market place and, as a result, more likely to attract and retain increasingly sophisticated customers [2]

## **2. LITERATURE REVIEW**

The concept of ERM is new and thus literature on the subject is still in its infancy as much of the existing evidence comes from survey and case studies [3]. However interest in ERM has continued to grow in recent years. ERM is defined as a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives [4]

### **2.1 Benefits of ERM**

[5] states that ERM involves the identification and evaluation of significant risks, assignment of ownership, completion and monitoring of mitigating actions to manage these risks within the risk appetite of the organization. [5] further states that, the outputs are the provision of information to management to improve business decisions, reduce uncertainty and provide reasonable assurance regarding the achievement of the objectives of the organization. ERM represents a radical paradigm shift from the traditional risk management (TRM) method of managing risks individually to managing risk holistically. In other words, ERM emphasizes

managing risks as a portfolio (risk portfolio) as opposed to managing individual risk separately [3]. The level of decision making under enterprise risk management is also shifted, from the insurance risk manager, who would generally seek to control risk, to the Chief Risk Officer (CRO), and overseen by a board of directors charged with monitoring risk measures and setting limits for these measures [6]. [5] highlights that during the 1990s, risk financing products emerged that combined insurance with derivatives. At the same time, corporate governance and listing requirements encouraged directors to place greater emphasis on ERM and the appointment of a CRO occurred at the time. During the 2000s, financial services firms have been encouraged to develop internal risk management systems and capital models. [5] also adds that, there has also been consideration of the fact that many risks are interrelated and that traditional risk management fails to address the relationship between risks. With the ERM approach, the relationship between risks is identified by the fact that two or more risks can have an impact on the same activity or objective. The ERM approach is based on looking at the objective, key dependency or core process and evaluating all of the risks that could impact the item being evaluated. Proponents of ERM argue that by integrating all risk classes, firms are able to avoid duplication of risk management expenditure by exploiting natural hedges [7]. [8] notes that, the concept of ERM has been embraced by an increasing number of insurers in recent years and ERM is increasingly regarded as an appropriate response or indeed a solution to managing risk in today's more complex and interdependent markets and operating environments. The insurers will be seeking to improve their management practices and the operating performance of their businesses. [5] highlights that the financial crisis of 2008 called into question the contribution that risk management can make to corporate success, especially in financial institutions. However, there is no doubt that the application of risk management tools and techniques failed to prevent the global financial crises. The financial crisis was a failure to correctly apply risk management processes and procedures, rather than inherent defects in the risk management approaches. [3] expound that part of the rationale for adopting ERM and/or appointing a CRO is to break down the departmental budgetary and political barriers in the identification, evaluation and management of risk. Breaking down the departmental budgetary and political barriers will allow the firm to consolidate its "non-core" risks into a risk-portfolio and hedge the risk-portfolio in a coordinated manner. [9] argues that the objective of ERM is not to eliminate risk. Rather, it is to manage risks within a framework that includes self-imposed limits. However, in setting limits for risk, the insurer should consider its solvency position and its risk tolerance. Firms that engage in ERM are able to understand the aggregate risk inherent in different business activities and this provides them with a more objective basis for resource allocation, thus improving capital efficiency and return on equity [10]. [11] also adds that, firms that pursue ERM are able to comprehend the collective risk intrinsic in different business actions and this gives objective stance for resource allocation, as a consequence improving capital efficiency and return on equity. Organisations with a wide range of investment opportunities are likely to benefit from being able to select investments based on a more accurate risk adjusted rate than was available under traditional risk management approach [11]. Individual risk management activities may reduce earnings volatility by reducing the probability of catastrophic losses, however, there are potential interdependences between risks across activities that might go unnoticed in the TRM model. ERM provides a structure that combines all risk management activities into one integrated framework that facilitates the identification of such interdependences [11,12] found that insurers perceived benefits and contribution of ERM in the following order namely: better risk and return decision making, value creation, instilling risk awareness into the business and creating a common language of risk, portfolio view of risks and reinforcing ownership of risk and control at the business unit level.

## **2.2 Drivers for ERM Adoption**

Previous studies have identified numerous influential factors of ERM adoption among firms. According to [1], the trend towards the adoption of ERM is attributed to external and internal factors. The foremost external controls that have determined organization to move towards risk management in a holistic manner are a broader scope of risks arising from factors such as globalization, industry consolidation, and deregulation; increased regulatory attention to corporate governance; and technological progress that enables better risk quantification and analysis [13]. Internal factors are crucial to maximize shareholder's wealth. There are a number of forces that drive the growth in, as well as acceptance of ERM and comprise organization disasters that have raised awareness level of the board members and senior executives; new regulatory capital and examination requirements; industry initiatives on corporate governance and risk management; and leading corporations which have experienced significant benefits from using ERM programs. [14,15] found that ERM adoption is negatively associated with lagged changes in performance. [15] findings suggest that a negative past performance may influence the actions of CEOs to protect their career concerns and therefore, shareholders will believe that the management is capable of handling poorly performed years and will desist from sanctions against the management board. One of the reasons why insurance companies implement an ERM framework is because it might be required by an industry regulator, or by firms auditors or investors or rating agencies [16]. Standard and Poor began incorporating ERM analysis into their credit-rating process for insurance companies in 2005. ERM is now one new category of analysis along with the existing categories of competitive position, management and corporate strategy, operating performance, capitalization, liquidity, investments, and financial flexibility [2,16]. states that ERM processes are sometimes implemented in response to a previous risk management failure in an organisation. However, a risk management failure in one's own organisation is not necessarily the precursor to an ERM framework. A high profile failure in another firm, particularly a similar one, might prompt other firms to protect themselves against a similar event. [17] appears to agree that ERM may be adopted in response to a failure of another organisation and further highlight that, awareness of operational and strategic risks has increased due to a succession of high-profile cases of organisations crippled or destroyed by failure of control mechanisms for example the Barings Bank or by insufficient understanding of their business for example the General American Insurance company. [17] note that companies are now exposed to more complicated risks and this is a driving force to ERM adoption. New risks emerge with the changing business environment. The growing tendency to quantify risks has been another drive to ERM adoption. Advances in technology have made quantifying risks easier for infrequent, unpredictable risks that historically have been difficult to quantify [17]. However the use of technology gives rise to new risks that should be evaluated as soon as they occur without delay.[18] found that forces driving firms to adopt ERM include the influence of risk managers, encouragement from the board of directors, and compliance with Toronto Stock Exchange guidelines, while the main deterrence to ERM adoption is organizational inertia. According to [19]the key driving forces for ERM are leadership of CEO, solvency II, corporate governance, leadership of CRO and the changing landscape. Regulations primarily influence the behaviour of organizations through the exercise of state power and stability of the insurance market is a primary concern of insurance regulators. Traditionally, insurance legislation is focused on managing and reducing risks arising from insurance and investment operations. Consequently, regulations, in terms of ensuring solvency through risk and capital management and appropriate corporate governance, are seen as the key driver towards ERM in the insurance industry.

## **2.3 Implementation Challenges**

[20] states “ERM implementation is still a challenge for the insurance industry, although significant progress has been made, as studies from Pricewaterhouse Coopers show”. The implementation of a successful ERM is a challenging exercise. One factor is the explicit commitment of the executive management. But senior management must also be closely involved. An ERM system must be comprehensive and consistent, meaning that no part of the company must lag behind. [21] noted that, some organizations that attempted to implement ERM have failed or experienced setbacks that prevent the gaining of expected benefits. The main cause of these failures could be the lack of buy-in from senior management and oversight committees such as audit committees [22]. Failure is also caused by lack of theoretical ERM knowledge; a poorly customized ERM approach; incorrect or incomplete set-up of oversight structures to support the ERM initiative; poor tone at the top, including ethical culture and lack of formalized business strategies; insufficient financial and human resources to support implementation and maintenance of the ERM process; inability to maintain the momentum of the ERM implementation project beyond the first year; poorly defined ERM language; Inefficient supervision of consultants[22]. According to [23], embedding ERM is proving to be a significant challenge. According to the study conducted by [23], large insurers are significantly more advanced in most ERM aspects. European insurance companies are better prepared than in North America and in the Asia and Pacific region. Another challenge in implementing ERM is that a company must develop its own system, based on needs, culture and resources and this makes the installation of a well-functioning ERM framework a major challenge in the management task.[20,6] state that, a major challenge for a company implementing ERM is to ensure that decision-making is not just by senior management, but by business managers throughout the firm, takes proper account of the risk-return trade off. To make this happen, the risk evaluations of new projects must be performed, at least initially, on a decentralized basis by the project planners in the business units. [6] further explain that, for a company to succeed in implementing ERM, it is critical that people throughout the organization understand how it can create value. Managers must understand that it is not an academic exercise but a critical tool for executing the firm’s strategy and therefore, ERM must be “sold” to and “bought into” by all levels of the organization. In order for the whole organization to support the ERM strategy, considerable thought must be devoted to the design of managerial performance evaluation and incentives. [19] divided the challenges in implementing ERM into two sections which are operational challenges and technical challenges. The findings of the study examining ERM practised by four European-based insurance companies showed that risk communication (in the absence of a common risk language and a common risk culture) was identified as the key operational challenge and the other operational challenges were risk awareness amongst middle level staff, risk communication between different disciplines, accuracy, consistency and inadequacy of data. [19] showed that the technical challenges were, measurement of operational risks, modelling of risk, measurement of strategic risk, calculating of correlations among business lines, profiting risk and calculating correlations among risk classes. Communication is often a challenge associated with an emerging topic. [19] suggested that lack of understanding is a major obstacle; risk communication must be improved and conflict overcome in order for the goals of ERM to be achieved. However, risk communication is not an isolated issue; it is essentially linked to the attitude of individuals towards risk and is subsequently linked to culture. Moreover, all these issues are linked to the motivation of achieving risk management goals. Furthermore, an effective risk communication system can introduce a culture of choosing good risks and rejecting bad risks at every level of the organization.

### 3. RESEARCH AIM

The primary objective of the research was to establish the perception of ERM by short-term insurers in Bulawayo, Zimbabwe. This was meant to increase their risk awareness, facilitate effective decision making and increase firm's value. The research looked at what benefits ERM can bring to the Zimbabwean Market, identified factors that would influence short term insurance firms to adopt ERM and considered the challenges that the firms are likely to meet when implementing ERM.

### 4. RESEARCH METHODOLOGY

Primary and secondary data were used in this research. The research instrument used was a closed questionnaire with a Likert five point scale on a sample of 35 short term companies in and around Bulawayo, Zimbabwe. The population was selected from a listing of 80 companies, 40 were selected from the frame that was obtained from the Ministry of Finance. The Sample was selected using simple random sampling. It was observed that that all companies selected had an equal chance of being selected. There were limitations on time constraints and also the limitations regarding confidentiality clauses signed by managers implied certain questions were to be answered partially. A survey was used to collect the primary data. Secondary data was collected from journals, a variety of publications and text books, financial reports for short term insurance companies were used to complement the findings of the primary data. A positivistic approach suggests that closed questions should be used; therefore closed ended questions were used in the questionnaire in this research [24]. Short term insurance includes both short term insurers and reinsurers. There are many departments in the insurance company varying from underwriting, claims, accounts and finance, human resources, to managing directors and board. In this research our respondents are employees of short term insurance companies in the working fields of the insurance company's value chain. The group of people asked to participate in this research was randomly chosen in the working fields of the insurance company's value chain including underwriters and claims. The reason for covering all areas and fields of work in the insurance companies is to have a holistic view of the perceptions of employees on the subject of study, ERM. The sample size was eighty six.

### 5. RESEARCH FINDINGS

#### 5.1 Reliability Statistics

Cronbach's alpha coefficient was calculated for internal consistency reliability of scales in the questionnaire. An overall reliability coefficient for the entire survey instrument was also calculated. The reliability statistics for the four categories are shown on Table 1.

**Table 1. Reliability statistics**

	<b>Cronbach's Alpha</b>	<b>N of Items</b>
Benefits of ERM	.760	7
Operational Challenges	.886	14
Technical Challenges	.871	10
Drivers for ERM adoption	.732	4

The reliability coefficients for the different categories and the entire survey instrument have a value greater than 0.7 .George and Mallery (2003) provide the following rules of thumb: “\_ > .9 – Excellent, \_ > .8 – Good, \_ > .7 – Acceptable, \_ > .6 – Questionable, \_ > .5 – Poor, and \_ < .5 – Unacceptable” .Therefore, the survey instrument is generally good and acceptable.

## 5.2 Perceived Benefits of ERM in the Short-term Insurance Industry

There are numerous benefits for the insurance companies who embrace an enterprise-wide approach to risk. Respondents were asked a question on the value that ERM will provide to their companies. The mean value and standard deviations for this question is shown in Table 2.

**Table 2. Descriptive statistics for benefits of ERM**

	Mean*	Std. deviation
[24], capital adequacy assessment	3.98	1.047
[22], increased ability to escalate critical issues to senior management	3.87	1.001
[25], improved understanding of risk and controls	3.83	.914
[27], enhanced risk culture and better balance of risk and rewards	3.83	1.156
[23], increased perception by regulators	3.75	1.082
[28], enhanced shareholder value through improved stock price	3.75	1.046
[26], annual business planning	3.70	1.234

\*-(The following scales are used to measure the importance of respondents' perceptions.

- Mean scores ranging from  $1.0 \leq M < 1.8$ : Very low importance
- Mean scores ranging from  $1.8 \leq M < 2.6$ : Low importance
- Mean scores ranging from  $2.6 \leq M \leq 3.4$ : Neutral
- Mean scores ranging from  $3.4 < M \leq 4.2$ : High importance
- Mean scores ranging from  $4.2 < M \leq 5.0$ : Very high importance)

From the results obtained, the average was observed as 3 hence there is a high importance placed on ERM based on their perceptions.

The respondents considered all the benefits that can accrue from implementing ERM, such as enhanced risk culture and better balance of risk and rewards as items of high importance to their companies. The standard deviations of the items on the benefit of improved understanding of risk and controls is around one, which indicates that the responses for each item do not differ greatly from each other. For the rest of the items standard deviations of the items are slightly greater than one, which indicates that the individual responses on average were a little over one point away from the mean.

## 5.3 Drivers for Adoption of ERM

In this part, the respondents were required to indicate which of the four listed factors would most likely influence their companies to adopt ERM. The mean value and standard deviations for this question is shown in Table 3.

**Table 3. Descriptive statistics for drivers for adoption of ERM**

	Mean*	Std. deviation
[56], to maximise earnings and financial strength	3.96	1.204
[55], shareholder considerations	3.68	1.237
[54], overall business complexity	3.57	1.152
[53], Zimbabwe insurance regulating commission and other regulating expectations	3.47	1.367

100% of the respondents' perceptions about the influence of the listed drivers of adoption of ERM were that they are of high importance to their companies. All the factors would influence their companies to adopt ERM. The standard deviations of all the items are slightly greater than one, which indicates that the individual responses on average were a little over one point away from the mean.

#### 5.4 Implementation Challenges

While ERM will bring benefits to the insurance companies, there are challenges that companies might experience in implementing an effective ERM program. Respondents were questioned on these challenges. In the questionnaire 14 operational challenges and 9 technical challenges were listed. This list of challenges is not exhaustive but touches on the main challenges. The respondents were asked to evaluate these challenges according to their company's capabilities.

#### 5.5 Operational Challenges

The respondents' perceptions on the operational challenges of implementing ERM were neutral. The standard deviations on the other hand show that the responses are concentrated around the mean.

**Table 4. Descriptive statistics for operational challenges of implementing ERM**

	Mean*	Std. deviation
[33], appropriate risk analysis techniques	3.13	1.272
[42], a common risk language	3.12	1.308
[38], data accuracy	3.11	1.204
[31], risk awareness at the top level	3.10	1.142
[32], risk classification	3.08	1.181
[35], data adequacy	3.08	1.299
[34], linking risks with corporate strategy	3.00	1.386
[40], risk awareness at middle level	3.00	1.240
[41], a common risk culture	3.00	1.386
[39], risk communication across discipline	2.98	1.232
[36], data consistency	2.96	1.091
[30], risk communication	2.96	1.073
[37], risk controlling	2.92	1.269
[29], data storing	2.74	1.129

## 5.6 Technical Challenges

The only important technical challenge perceived by respondents in terms implementing ERM in their organisations is risk modelling (mean = 3.40). This may be because this technical aspect would require the involvement of the skills of an actuary and it is expensive for companies to source the expertise of an actuary. The perceptions of the respondents on the other items were neutral. The standard deviations of all the items are slightly greater than one, which indicates that the individual responses on average were a little over one point away from the mean.

**Table 5. Descriptive statistics for the technical challenges in implementing ERM**

	Mean*	Std. deviation
[50], risk modelling	3.40	1.276
[48], allocation of capital across business lines	3.30	1.119
[52], risk measurement: operational	3.28	1.166
[44], calculating risk based capital	3.21	1.261
[49], determining correlations among business lines	3.08	1.152
[45], allocation of capital across business units	3.06	1.183
[43], determining risk appetite	2.96	1.055
[51], risk measurement: strategy	2.94	1.134
[46], risk identification	2.89	1.266
[47], risk integration	2.88	1.247

## 6. CONCLUSION AND AREAS OF FURTHER STUDY

### 6.1 Conclusion

The respondents were asked to state their perceptions on the benefits sought from the application of ERM. The researcher selected seven benefits of ERM and accordingly asked the respondents to assess these seven benefits in the case of ERM implementation. In other words, to what degree they think that their company will achieve to these benefits if their company were to adopt ERM. In conclusion, the results are consistent with prior literature. The majority of respondents perceived the seven benefits to be of great importance to their firms. This means that the Zimbabwean short term insurance companies will take advantage of these benefits, if they adopt ERM.

Additionally, the researcher provided an examination of the likely challenges those insurers would encounter in their efforts to implement ERM. The majority of the respondents believed that the listed major obstacles will hinder ERM implementation. The respondents perceive risk modeling to be a neutral challenge to their companies. This may be because risk modeling requires the expertise of an actuary and is expensive to source the expertise of an actuary. A list of both internal and external factors that can influence the companies to adopt ERM was provided to the respondents for them to indicate which factors would influence their companies to adopt ERM. Zimbabwean short-term insurers believe that all the factors listed would influence their companies to adopt ERM. Furthermore, they expressed that all the factors are of high importance to their companies. These include maximising earnings and financial strength, shareholder considerations as well as the Zimbabwean regulating commission and other regulating bodies.

## **6.2 Areas of Further Research**

Further research is needed to look into the different frameworks that the short-term insurers can adopt in their efforts to adopt a holistic view to risk management. There are many frameworks available like the COSO ERM framework; the challenge is selecting one that is suitable for the Zimbabwean short term insurers.

## **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

## **REFERENCES**

1. Subhani MI, Osman A. The essence of enterprise risk management in today's business enterprises in developed and developing nations. *European Journal of Social Sciences*, 2011;25(4):515-524.
2. Standard & Poor Insurance criteria: Evaluating the enterprise risk management practices of insurance companies: Rating direct; 2005.  
Retrieved:[http://www.standardandpoors.com/spf/upload/Ratings\\_US/Enterprise\\_Risk\\_Management\\_5\\_7\\_13.pdf](http://www.standardandpoors.com/spf/upload/Ratings_US/Enterprise_Risk_Management_5_7_13.pdf).
3. Eckles DL, Hoyt RE, Miller SM. The impact of enterprise risk management on the marginal cost of reducing risk: Evidence from the insurance industry; 2011. Retrieved from: <http://www.sju.edu/int/academics/hsb/resources/workingpapers/Papers/11-5.pdf>
4. Hopkin P. Fundamentals of risk management: Understanding, evaluation and implementing effective risk management standards and guidance material. London: Kogan Page; 2010.
5. Hopkin P. Fundamentals of risk management: Understanding, evaluation and implementing effective risk management standards and guidance material. London: Kogan Page; 2010.
6. Nocco BW, Stulz RM. Enterprise risk management: Theory and practice. *Journal of Applied Corporate Finance*, 2006;18(4):8-20.
7. Liebenberg AP, Hoyt RE. The value of enterprise risk management. *Journal of Risk and Insurance*. 2011;78(4):795-822.
8. International Actuarial Association. Practice note on enterprise risk management for capital and solvency purposes in the insurance industry; 2008.  
Retrieved:<http://www.actuaries.org.uk/research-and-resources/documents/practice-note-enterprise-risk-management-erm-capital-and-solvency-pdf>
9. International Association of Insurance Supervisors. Enterprise risk management standards and guidance material; 2010.  
Retrieved:[http://www.iaisweb.org/\\_temp/ICP\\_16\\_Enterprise\\_Risk\\_Management\\_standards\\_and\\_guidance\\_material.pdf](http://www.iaisweb.org/_temp/ICP_16_Enterprise_Risk_Management_standards_and_guidance_material.pdf)
10. Hoyt RE, Liebenberg AP. The value of enterprise risk management: Evidence from the U.S. insurance industry; 2008.  
Retrieved from: <http://www.ermssymposium.org/pdf/papers/Hoyt.pdf>
11. Meulbroek LK. Integrated risk management for the Firm: A senior manager's guide. *Journal of Applied Corporate Finance*. 2002;14:56–70.
12. Pricewaterhouse coopers .Does ERM matter? ERM in the insurance industry.A global study; 2008. Retrieved from: [www.pwc.com/en\\_GX/gx/insurance/pdf/erm\\_survey.pdf](http://www.pwc.com/en_GX/gx/insurance/pdf/erm_survey.pdf)
13. Miccolis J. Shah S. Enterprise risk management: An analytic approach. Tillinghast – Towers Perrin; 2000.

14. Lam J. Managing risk across the enterprise: Challenges and benefits. Risk management: A modern perspective. Burlington: Elsevier; 2006.
15. Altuntas M, Berry-Stölzle TR, Hoyt RE. Dynamic determinants of Enterprise Risk Management Adoption in the Property-Liability Insurance Industry: Evidence from Germany. The Geneva Papers on Risk and Insurance – Issues and Practice, Forthcoming; 2011.
16. Sweeting P. Financial enterprise risk management. Cambridge: University Press; 2011.
17. Casualty Actuarial Society ERM Committee. Overview of enterprise risk management; 2003. Retrieved from: [www.casact.org/area/erm/overview.pdf](http://www.casact.org/area/erm/overview.pdf)
18. Kleffner AE, Lee RB, McGannon B. The effect of corporate governance on the use of enterprise risk management: Evidence from Canada. Risk Management and Insurance Review. 2003;6:53-73.
19. Acharyya M, Johnson J. Investigating the development of enterprise risk management in the insurance industry: An empirical study of four major European insurers; 2006. Retrieved: <http://www.actuaries.org.uk/research-and-resources/documents/investigating-development-enterprise-risk-management-insurance-indu>
20. Ratcliffe W, Samer F, Langer B. (From risk management to ERM; 2009. Retrieved from: [http://www.scor.com/PandC\\_docs/SCOR\\_FocusERM\\_102009.pdf](http://www.scor.com/PandC_docs/SCOR_FocusERM_102009.pdf)
21. Jabbour M. The impact of enterprise risk management on capital allocation in the insurance companies; 2011. Retrieved from: <http://ssrn.com/abstract=1910283>
22. De La Rosa S. Moving forward with ERM. The Internal Auditor. 2007;64(3):50.
23. Tillinghast-Towers Perrin. Enterprise risk management in the insurance Industry: Bench marking survey report; 2000. Retrieved: <http://www.towersperrin.com/tp/getwebcachedoc?webc=till/usa/2000/200001/2000060107.pdf>
24. Hopkin P. Fundamentals of risk management: Understanding, evaluation and implementing effective risk management standards and guidance material. London: Kogan Page; 2010.

---

©2014 Mazviona et al; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<http://www.sciencedomain.org/review-history.php?iid=535&id=20&aid=4830>