# Enterprise Risk Management Maturity Levels of the Insurance Industry in Botswana

Moreblessing Ngwenya, PhD[1] and Sam Ngwenya, PhD[2]
[1]Botswana Open University
[2]University of South Africa

*Corresponding Email: mbngwenya@gmail.com

**Abstract**: *Enterprise Risk Management (ERM) has become a necessity in the financial sector to fulfil stakeholder expectations. Studies confirm that ERM impacts positively on the performance of firms. The main objective of the study was to assess ERM maturity levels of the insurance industry in Botswana. This was achieved through first designing a framework to measure enterprise risk management maturity levels. The ERMMF incorporated elements from COSO's ERM framework and the AON risk maturity model obtained through literature review. Data were sourced from four strata; 9 long term insurance companies (15 respondents), 11 short-term insurance companies (19 respondents), 3 reinsurers (5 respondents), and 44 brokerages (75 respondents). While all organisations in the population were used, a sample of 114 out of possible 134 respondents was used. Data were analysed using SPSS version 16. The findings revealed that the insurance industry in Botswana had somewhat implemented ERM. It is therefore recommended that the insurance industry in Botswana should take ERM as a continuous process for growth in ERM maturity levels as such an improvement is highly likely to enhance their performance.*

**Keywords:** Enterprise, Risk Management, Maturity Level, COSO, ERM, framework, insurance

## Introduction

Risk management has received much attention globally in the past ten years (Coetzee & Lubbe, 2013). The development of worldwide financial crisis dispelled the idea of viewing risks in silos but rather led to embracement of Enterprise Risk Management (ERM). ERM is a rounded approach to risk management accentuating cooperation of all organisational functions in the management of risks (Chartered Enterprise Risk Analyst, 2013, Hoyt & Liebenberg, 2011).

ERM has been considered vital by diverse supervisors and boards that include International Financial Reporting Standards, the Basel III and Solvency I, among others (Public Risk Management Association, 2010). ERM activities are equally observed in the insurance industry globally as the organisations set up boards that handle ERM issues (Laeven & Perotti, 2010).

For the past five years, the insurance industry in Botswana has been rigorously ensuring that risk management is practiced as the regulator, Non-Banking Financial Institutions Regulatory Authority (NBFIRA) tightened its regulatory objectives (NBFIRA, 2016). A model was put in place to enable the regulator to follow up on the players in the insurance industry. Through use of this risk-based supervision model, the regulator alleged that the insurance industry had not yet reached the desired levels of maturity in enterprise risk management (NBFIRA, 2016) although this had not been empirically tested. Therefore, this study sought to determine the ERM maturity levels of the insurance industry in Botswana.

## Literature Review

This section examines components of enterprise risk management which were used to assess the maturity levels of the insurance industry in Botswana. It further looks into ERM maturity models developed to measure ERM maturity levels. Furthermore, the impact of enterprise risk management on organisational performance is discussed.

## Enterprise Risk Management (ERM)

Enterprise Risk Management (ERM) is a rigorous and organised approach for assessing risks and responding to all risks that affect the achievement of the strategic and financial objectives of an organisation (Alviunessen & Jankensgard, 2009). The Committee of Sponsoring Organisations of the Treadway Commission (COSO) (2004) in their ERM-integrated framework, elaborately defined ERM as the process applied by an entity's Board of Directors, management and other personnel in strategy setting to identify potential events that may affect the entity and to manage risk within its risk appetite, hence providing reasonable assurance on achievement of entity objectives.

Eight components of ERM as expounded by COSO (2004), namely internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring formed the foundation of this study.

## Risk Management and Performance

Literature on impact of ERM on performance of entity reveals that ERM results in better management decisions which in turn lead to efficiency and maximised performance (Gates, Nicholas & Walker, 2012). As such, organisations which keenly improve the way they handle risks, implement innovative procedures, establish new technology and aggressively redesign their organisational culture to expedite better risk taking have experienced higher performance (Malik, 2017, Setapa, 2015). Additionally, Brown, Steen and Foreman (2009) asserted that well planned ERM processes result in elimination of unexpected outcomes, thereby enabling management to exploit opportunities that will augment information processing and communication. This, in turn, will increase firm reputation, enhance corporate accountability, assurance and governance which contribute to overall firm performance.

Furthermore, studies that have been conducted confirm that ERM has a positive impact on the performance of firms. A desk study conducted by Krause and Tse (2016), for instance, which compiled a survey of 65 recent theoretical and empirical studies on the impact of ERM on business performance, stressed that ERM practices reduce costs associated with a business operation and facilitate competitive advantage and superior performance. Another study conducted in Pakistan by Songling, Ishtiaq and Anwar (2018) concluded that senior management members are financially educated to practice ERM, which can influence a firm's competitiveness and maximised performance. Pagach and Warr (2007) conducted a longitudinal study whose global data was obtained from Compustat database and findings revealed that the performance of a firm that has implemented ERM is likely to increase by between 4 per cent and 17 per cent as compared with a firm that is not using ERM practices. Therefore, it is claimed that ERM is one of the factors that add value to a firm's performance. This establishes the importance of determining the Enterprise Risk Management Maturity Levels of organisations.

## ERM Maturity Levels

Since ERM is not an event but a process, it is anticipated that organisations differ in maturity level of its application. It is expected that an organisation might be advanced in some of the eight components of ERM but not in others. Ciorciari and Blattner (2008) emphasise that if an organisation is weak in the implementation of one of the eight ERM components, the rest of the other ERM components will also be crippled. The COSO ERM components that were useful in the assessment of ERM maturity levels are as follows:

### Internal Environment

The internal environment considers whether the organisation has incorporated risk management in its culture. This component of ERM sets the tone of how an organisation views risk management. If the internal environment does not promote risk management, it may well be expected that all other ERM components will be weak.

## Event Identification

The event identification component of ERM requires that internal and external events that impact on the achievement of the objectives of an organisation be identified distinguishing between risks and opportunities.

### Objective Setting

Prior to identification of risks, objectives must exist. ERM propels management to set objectives that support and are affiliated to the mission of the organisation.

### Risk Assessment

Risks are analysed, considering likelihood and effects as a basis for determining how they should

be managed. Risks are assessed on an inherent and a residual basis.

### Risk Response

Management selects risk responses – avoiding, accepting, reducing, or sharing risk – developing a set of actions to align risks with the risk tolerances and risk appetite of the entity.

### Control Activities

Policies and procedures are set up and implemented in a way that ensures that the responses to risk are effective.

### Information and Communication

Relevant risk related information is identified, captured and communicated in a form that is understandable by its users.

### Monitoring

ERM is monitored in its totality and adjustments are made as needed. Monitoring is accomplished through ongoing management activities and separate evaluations.

## OSO Model as Basis for the Development of the ERMMF

Several standards and frameworks that include the risk management standard developed by the Association of Insurance and Risk Manager (AIRMIC), The National Forum for Risk Management in the Public Sector (ALARM) and the Institute of Risk Management (IRM) were analysed and were observed as neither comprehensive nor straightforward culminating in the justification of choice of the COSO framework for use as foundation for development of the proposed ERMMF.

This study employed the COSO ERM framework due to its perceived simplicity and comprehensiveness. It contains several qualitative processes outlined in Solvency II such as the importance of the role played by the board, reinforcement of internal controls and monitoring the risk management process (European Parliament and council, 2007). It was, therefore, deemed appropriate for the development of a framework for the insurance industry in a developing country like Botswana.

## Enterprise Risk Maturity Models

Coetzee and Lubbe (2013) take a stance that ERM models are requisite in risk management. They argue that attention should be invested in the development of a comprehensive risk maturity model to ensure the credibility of the results obtained from the use of the model. To develop

such a dependable model requires benchmarking with global standards so that it can be confidently used within the global risk management environment at large and hence gain the confidence of the governing bodies and management. Several models were analysed and are discussed for the synthesis of an appropriate model for use in this study.

The capability maturity model developed in the 1980s by the Software Engineering Institute (SEI) in the United States of America to measure information technology maturity formed the basis for most risk maturity models that were developed thereafter. It has five levels: initial, repeatable, defined, managed and optimising (Paulk, Curtis, Chrissis & Weber, 1986). The application of this model was found limited to organisations involved in software development processes (Hillson, 1997).

The risk maturity model by Hillson (1997) suggests that risk management can be categorised into groups ranging from no formal process to fully integrated risk management. It has four levels of risk maturity: naïve, novice, normalised and neutral, in the order of lowest to highest.

Another model considered was the business excellence model from the European Foundation for Quality Management (EFQM) which, like the capability maturity model, focused on capability, maturity and business excellence (European Foundation for Quality Management EFQM, 2013). The model does not specifically assess levels of risk management maturity.

The business risk management maturity model of the International Association for Contract and Commercial Management (IACCM) was developed to address the question of how an organisation could evaluate, in a quantifiable fashion, its level of maturity in business risk management (BRM). It identifies four levels of organisational competence in business risk management: novice, competent, proficient and expert ranked from lowest to highest level (International Association for Contract and Commercial Management, 2003). The researchers deemed this model as not encompassing all possible risks with which an organisation is faced.

The Risk and Insurance Management Society (RIMS) introduced another risk maturity model in 2006 to help organisations to specifically better utilise ERM (RIMS, 2011). The model has five maturity levels: ad hoc, initial, repeatable, managed and leadership.

While this model focused on ERM, the researchers considered the maturity levels as not clearly defined.

The risk maturity model, which was developed by Aon in 2010, has five maturity levels: Initial/Lacking, Basic, Defined, Operation and Advanced (Aon, 2010). The model uses nine attributes: board-level commitment, a dedicated risk executive in a senior level position, risk management culture that encourages full engagement and accountability, engagement of all stakeholders, transparency of risk communication, integration of risk information into decision-making, use of sophisticated quantification methods, identification of new and emerging risks, and risk management focused on extracting value (Aon, 2010). This model was considered the most appropriate for the development of the ERMMF.

## Research Methodology

This study was descriptive as it sought to determine the ERM maturity level of the insurance industry. It used a quantitative approach as a questionnaire with the Likert scale ranging "Strongly Disagree" to "Strongly Agree" was used.

### Instrument and Data Collection

Primary data was collected by making use of a self-administered questionnaire. Respondents were each given a week on average to complete the questionnaire. The completed questionnaires were collected by the researchers and/or a fieldworker to eliminate non-response bias. This took about three months to accomplish as some participants took more than a week to complete the questionnaire.

### Population and Sampling

The population of the study consisted of 9 long-term insurance, 11 short-term insurance, 3 reinsurance and 44 brokerage companies in Botswana. These are all regulated by NBFIRA. From the preliminary research, each of the organisations was estimated to have two people who directly dealt with risk management in the organisation, hence bringing the estimated population in terms of potential respondents to 134.

For the purposes of this study, 19 respondents were selected from the 11 short-term insurance organisations, 15 from the 9 long-term insurance companies, 5 from the 3 reinsurance companies and 75 from the 44 brokerages through random sampling procedures. This resulted in the total of 114 respondents. In order to find the sampling size, the following equation, as propounded by Tabachnik and Fidell (2001), was implemented:

N = 50 + 8m (where m is the number of independent variables).

There were eight variables being the eight components of the COSO model. The actual sample was 114 (out of the estimated 134) respondents coming from the four strata. The 114 was calculated as follows:

N = 50 + 8m
= 50 + (8X8)
= 50 + 64
= 114.

To find the desirable number of respondents per strata, 114 total respondents were distributed among the 67 organisations through proportionate weighting as indicated in Table 1. Data were checked for completeness, and then coded and captured using Microsoft Excel 2010 Version.

**Table 1: Determination of the sample**

| Enterprise | Calculations | Desired number from strata |
|---|---|---|
| Short-term insurance | 114 (11) / 67 | 19 |
| Brokers | 114 (44) / 67 | 75 |
| Long-term insurance | 114 (9) / 67 | 15 |
| Reinsurance | 114 (3) / 67 | 5 |
| Total | | 114 |

Analysis of the quantitative data was done through the Statistical Package for the Social Sciences software. Descriptive statistics assessed the level of ERM maturity per component.

### Validity and Reliability

To test the validity of the instrument, experts went through the questionnaire against research questions and gave comments for improvement. To ensure the acceptable reliability, the researchers

used Cronbach's alpha, which is a common measure of internal consistency. The Cronbach alfa for the questionnaire for this study was 0.9 thus rendering the questionnaire highly reliable.

## Findings of the Study

The response rate of the study was 79% for short-term insurance and brokers, and 80% for reinsurance and long-term insurance. This gave an overall weighted average response rate of 79% as seen in Table 2. As to w*hat criteria could be used in the development of the Enterprise Risk Management Maturity Framework (ERMMF), t*he study adopted the COSO model for the development of the ERMMF

for use by the insurance industry in Botswana. Although the study developed its own descriptors for the proposed ERMMF, it adopted the maturity levels of the Aon model, and used the Aon model to develop the measuring scale of the framework. Table 3 depicts the ERM maturity levels of the Aon model.

While figure 1 (p. 28) depicts a pictorial view of the proposed ERMMF which measures component-wise ERM maturity levels as well as the overall organisational ERM maturity level, table 4 provides the interpretation.
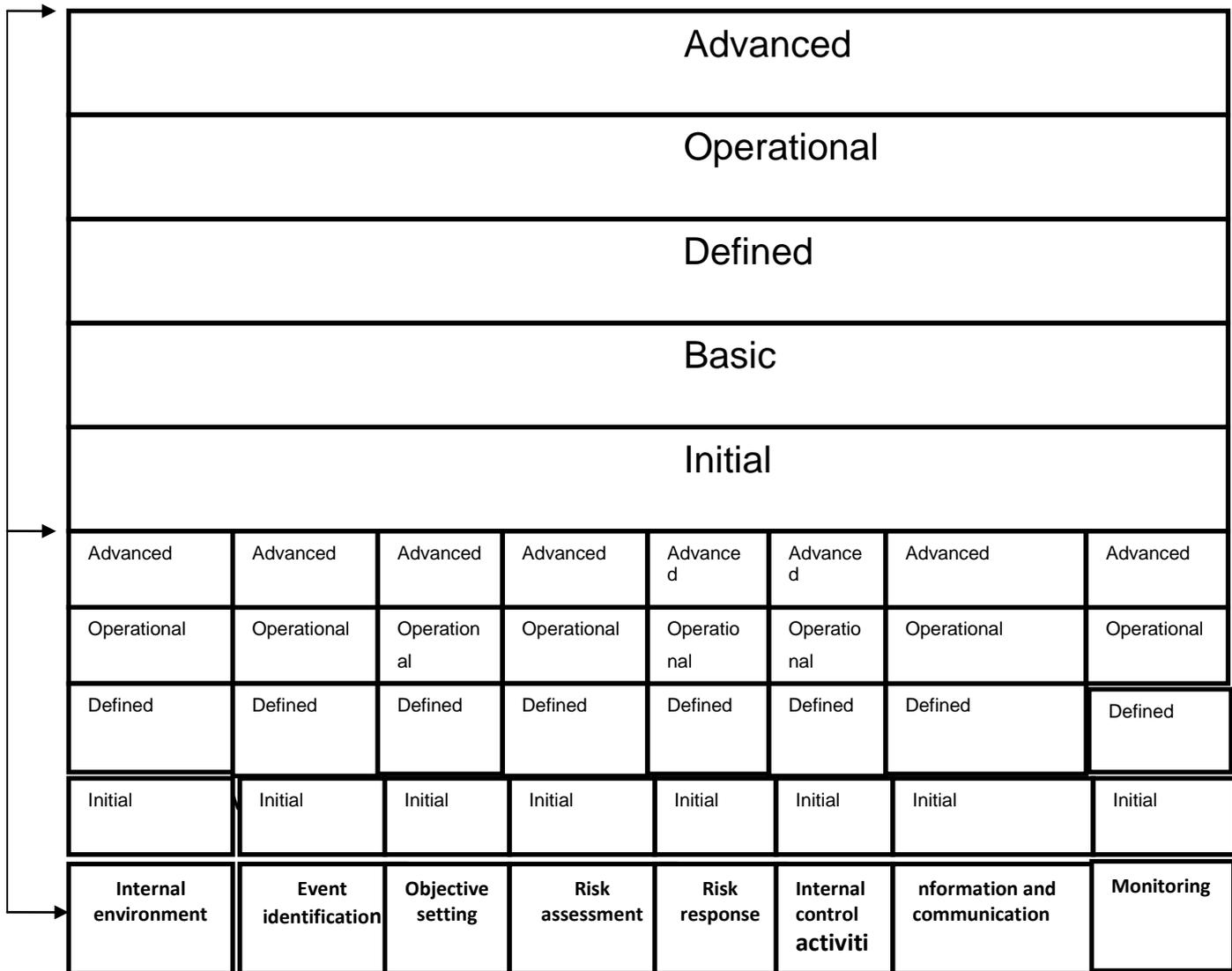
**Table 2: Response rate per stratum**

| Enterprise | Desired number from strata (sample) | Actual number of respondents | Response rate (percentage) |
|---|---|---|---|
| Short-term insurance | 19 | 15 | 79% |
| Brokers | 75 | 59 | 79% |
| Long-term insurance | 15 | 12 | 80% |
| Reinsurance | 5 | 4 | 80% |
| Total | 114 | 90 | 79% |

**Table 3: Levels and attributes of the Aon model**

| Model | Levels | Attributes |
|---|---|---|
| Aon (2010) | Initial/lacking | Board-level commitment |
| | Basic | A dedicated risk executive in a senior-level position |
| | Defined | Risk management culture that encourages full engagement and |
| | Operation | accountability |
| | Advanced | Engagement of all stakeholders |
| | | Transparency of risk communication |
| | | Integration of risk information into decision-making |
| | | Use of sophisticated quantification methods |
| | | Identification of new and emerging risks |
| | | Risk management focused on extracting value |

**Table 4: Interpretation Table**

| Scale | Mean scale interval | Response | Verbal response |
|---|---|---|---|
| 1 | 1.00–1.49 | Initial/lacking | The ERM risk component is not developed. Nothing is in place to show movement in the direction of ERM. |
| 2 | 1.5–2.49 | Basic | There are pointers towards the development of ERM systems. Employees not fully involved yet. |
| 3 | 2.5–3.49 | Defined | The ERM system is in place. Employees are aware of it. Objectives are to meet both external and internal requirements. However, there is minimum implementation and follow-up. |
| 4 | 3.5–4.49 | Operation | There is a complete ERM framework and an independent risk management function. There is board-level support of ERM. All senior management is alert to risks in their functions. |
| 5 | 4.5–5.00 | Advanced | A holistic approach to risk management exists. Risk management process is ongoing. |

Advanced

Operational

Defined

Basic

Initial

| Advanced | Advanced | Advanced | Advanced | Advanced | Advanced | Advanced | Advanced |
|---|---|---|---|---|---|---|---|
| Operational | Operational | Operational | Operational | Operational | Operational | Operational | Operational |
| Defined | Defined | Defined | Defined | Defined | Defined | Defined | Defined |
| Initial | Initial | Initial | Initial | Initial | Initial | Initial | Initial |
| **Internal environment** | **Event identification** | **Objective setting** | **Risk assessment** | **Risk response** | **Internal control activiti** | **nformation and communication** | **Monitoring** |

**Figure 1: ERMMF**

**Table 5 Component-wise maturity levels**

| Variable | Mean | Std. Deviation (SD) | Interpretation |
|---|---|---|---|
| Internal environment | 3.12 | 1.11 | Defined |
| Objective setting | 3.01 | 1.02 | Defined |
| Event identification | 3.00 | 1.01 | Defined |
| Risk assessment | 2.94 | 0.94 | Defined |
| Risk response | 2.92 | 0.88 | Defined |
| Internal control | 2.92 | 0.92 | Defined |
| Information and communication | 2.94 | 0.90 | Defined |
| Monitoring | 2.78 | 0.85 | Defined |

The objective of this study was to determine *the Enterprise Risk Management maturity levels of insurance industry in Botswana.* The maturity levels were measured using the developed ERMMF. Five criteria were used to determine ERM maturity levels of each variable (component).

Table 5 shows a summary of the findings in terms of levels of maturity of all the eight components. The findings from Table 5 are summarised as follows:

### Internal environment

The internal environment of the organisation is expected to determine the implementation of ERM. The findings indicate that the respondents were aware of the risk management discipline and the need to manage risks. While this is a general observation, for all criteria used to measure the 'internal environment' variable, the standard deviation (SD) is greater than 1, showing that the responses differed from respondent to respondent. A study conducted by the European Insurance and Occupational Pensions Authority (EIOPA) (2004) suggested that, if the internal environment does not promote a culture of risk management, the rest of the risk management components are not likely to be supported. It is therefore expected that the rest of the components for the Botswana insurance industry will not score beyond the Defined level scored by the internal environment component.

### Objective setting

This component enables the organisation to determine its risk appetite and tolerance. The criteria used measured the extent to which the organisation accommodated stakeholder interests, its determination of risk appetite and the participation of all employees in establishing risk management objectives. The overall average of the 'objective setting' component of 3.01 indicated that the objectives contained ERM and these have not only been set to meet external requirements but also as an internal risk management measure.

However, it appears the insurance industry in Botswana has not fully matured in this component of ERM as the mean score was within the defined level.

### Event Identification

Event identification' refers to the actual singling out of risks by the organisation. To measure levels of risk identification, the existence of mechanisms to detect and monitor risks were considered alongside the involvement of all employees in the process. Responses in the 'event identification' category differed slightly from one respondent to another as confirmed by the SD, which is just over 1. The mean score, which is 3.00, confirms that mechanisms for risk identification exist but they are not fully functional. This means that, at the time of this research, there was no serious follow-up to ensure that risks were identified although organisational risks are generally known. This agrees with literature that other components of ERM will not exceed the level at which the internal environment is found (EIOPA, 2017). The findings in terms of this component share similarities with the findings of the survey carried out by the Insurance Enterprise Risk Management Singapore Chief Risk Officers (CRO)'s Roundtable series (2013) in Singapore, where respondents indicated that only few identified risks are followed up. 'Event identification' is therefore at the Defined level, the same level with the internal environment.

### Risk Assessment

Risk assessment entails quantification and evaluation of risks while determining their influence and frequency risks (Curtis & Carey, 2012). Findings indicate that the insurance industry in Botswana has risk assessment in the policy, but it is not very much implemented as results by mean score were within the defined level. A similar survey carried out by the Insurance Enterprise Risk Management Singapore Chief Risk Officers (CRO)'s Roundtable series (2013) in Singapore indicated that the insurance industry in Singapore had problems assessing risks due to a lack of

expertise and adequate reliable data. A lack of expertise to analyse risks could be a problem in Botswana as well, although the study did not address the possible challenges.

## Risk Response

Risk response follows risk assessment, and this is a reactive process so that risks are handled accordingly, after their assessment. From table 5, an observation can be made that the SD of less than 1 indicates that the responses did not differ much between respondents. The overall average of this component was 2.92, indicating that, at the time of this research; the participating organisations had a predetermined risk appetite and some mechanisms to counter known risks. However, there was generally no proper follow-up to ensure that each organisation operated within its risk appetite as the mean score was just within the defined level. It was further observed that the participating organisations generally had policies regarding internal controls. These control measures are meant to address risks with which each organisation is faced. However, no fully developed mechanism to ensure that the control measures are followed was reported.

## Internal Control

After risk handling measures have been put in place, there is a need for internal control measures to keep risks within acceptable levels. To measure the levels of maturity in this component, the study examined whether the control activities in the policy were followed and whether they were made part of the appraisal process. The other criterion used was whether internal controls were monitored by the relevant committee. The findings revealed that the insurance industry in Botswana generally had policies regarding internal controls. These control measures are meant to address risks with which each organisation is faced. However, no fully developed mechanism was indicated to ensure that the control measures are followed was reported as the overall average for this component was 2.91.

The SD of less than 1 shows that the responses were generally homogenous for all respondents.

## Information and Communication

ERM requires that an organisation should have proper organisational structures that enable the reliable free flow of information. This will enhance two-way communication of risks vertically (from one management level to the other) and laterally (among departments and employees at the same hierarchical level in the organisation). Timeliness of the information and its relevance were gauged in each organisation. It was perceived from the results that the insurance organisations had generally set communication structures and there is somewhat promotion of open communication. The study therefore found that there seemed to be a likelihood of haphazard communication that is not according to set structures. There was probably no free flow of information internally and externally. As a result, there was probably also no proper communication of impending risks to relevant personnel. Responses were generally homogeneous when it came to the 'information and communication' component as the SD was below 1.

## Monitoring

As ERM is a continuous process, there is a need for organisations to monitor their activities to ensure that all risks are kept in check. This component was assessed using the involvement of company management and other functional leaders in monitoring risks to ensure they are always within the risk appetite of the organisation. The overall SD of the 'monitoring' component of 0.85 indicates the homogeneity of the responses in this category. The responses generally indicated that it is known within the industry that risk management and control measures are monitored. From the responses, it seemed that this is however, is not fully implemented as the mean score was within the defined level. There was also a possibility that, at the time of this research, most organisations

did not have an internal audit function to stimulate the monitoring procedures.

## Conclusion and Recommendations

This part presents the conclusions of the study and the corresponding recommendations.

### Conclusions

The study concluded that the insurance industry in Botswana was aware of ERM and had made attempts to implement it as the mean score in all categories was within the defined level and therefore there was still room for improvement. In other words, organisations had somewhat ensured that employees are aware of ERM. Therefore, objectives had been set to meet both external and internal requirements. Furthermore, minimum implementation and follow-up of ERM were in place at an average score due to the fact that the insurance companies that were part of the study scored around 3.00.

### Recommendations

It is therefore recommended that the insurance industry in Botswana should take ERM as a continuous process for growth in ERM maturity levels. The insurance industry regulator should make ERM reporting mandatory to benefit the insurance industry in Botswana while protecting the stakeholders. The proposed ERMMF can also be used in other similar developing countries.

## References

Alviunessen, A., &Jankensgård, H. (2009). Enterprise Risk Budgeting: Bringing Risk Management into the Financial Planning Process. *Journal of Applied Finance,* 19(1/2), 178-190.

AON. 2010. Global Enterprise Risk Management Survey. Retrieved from:http://www.aon.com/ attachments/2010_ global_ERM_Survey.pdf [Accessed 13 August 2015].

Brown, I., Steen, A., & Foreman, J. (2009). Risk management in corporate governance: A review and proposal. *Corporate Governance: An International Review*, 17(5), 546-558.

Chartered Enterprise Risk Analyst. 2013. Enterprise Risk Management fact sheet. Available from: https://www.soa.org /Files/Newsroom/news-erm-cera-fact-sheet.pdf [Accessed on 03 august 2013].

Ciorciari, M. & Blattner, P. 2008. Enterprise risk management maturity-level assessment tool. Society of Actuaries. Retrieved from: https://www.soa.org/library/.../2008/april/ mono-2008-m-as08-1-ciorciari-abstract.pdf [Accessed 13 August 2013].

Coetzee, G.P. & Lubbe, D. (2013). The risk maturity of South African private and public sector organisations. *Southern African Journal of Accountability and Auditing Research*, 14, 45–56.COSO (Committee of Sponsoring Organisations of the Treadway Commission). 2004. Enterprise risk management: Integrated framework. Retrieved from: http://www.coso.org [Accessed 2 August 2013].

Curtis, P. & Carey, M. 2012. Risk Assessment in Practice. Deloitte and Touche. Available from:https://www2.deloitte.com/content/ dam/Deloitte/global/Documents/Governa nce-Risk-Compliance/dttl-grc-riskassessme ntinpractice.pdf [Accessed on 3 August 2013].

EIOPA (European Insurance and Occupational Pensions Authority). 2017. Learning lessons from Solvency II. Retrieved from: https://eiopa.europa.eu/Publications/Inter views/Article-Enterprise%20Risk.pdf [Accessed 8 February, 2017].

European Foundation for Quality Management (EFQM). 2013. An overview of the EFQM excellence model. Available from: http://www.efqm.org/sites/default/files/o verview_efqm_2013_v1.pdf

European Parliament and council. 2007. Solvency II. Retrieved from:http://eur-lex.europa.eu/LexUriServ/

LexUriServ.do?uri=COM:2007:0361:FIN:EN: HTML [Accessed 16 June 2016].

Gates, S., Nicolas, J.-L., & Walker, P. L. (2012). Enterprise risk management: A process for enhanced management and improved performance. *Management accounting quarterly,* 13 (3) 28–38.

Hillson, D.A. 1997. Towards a risk maturity model. *The International Journal of Project and Business Risk Management*, 1(1) 35–45.

Hoyt, R.E. and Liebenberg, A.P. 2011. *The value of enterprise risk management. Journal of Risk and Insurance*, 78(4), 795–822.

International Association for Contract and Commercial Management. 2003. Organisational Maturity in Business risk Management. Available from: http://theriskdoctor.com.au/wp-content/ uploads/.../Final-TRD-Disc-Gp-PPs-for-3-7-12.pdf [Accessed 13 August 2013].

Krause, A. and Tse, Y. (2016). Risk management and firm value: recent theory and evidence, *International Journal of Accounting and Information Management*, 24(1) 56-81.

Laeven, R. J. A. & Perotti, E. C. 2010. Optimal Capital Structure for Insurance Companies. *Netspar Discussion Paper No. 11/2010-073*.

Malik, M. F. (2017). Enterprise risk management and firm performance: Role of the risk committee. Doctoral dissertation, Queensland University of Technology, Australia.

NBFIRA (Non-Banking Financial Institutions Regulatory Authority). 2015. Annual report. Retrieved from:http://www.nbfira.org.bw/sites/defa ult/files/2015%20NBFIRA%20Annual%20Re port%20Inside%20Pages%20(003).pdf [Accessed 2 February 2016].

Pagach, D. and Warr, R. (2007). The characteristics of firms that hire chief risk officers. *Journal of Risk and Insurance*, 78(1), 185-211.

Paulk, M.C., Curtis, B., Chrissis, M.B. & Weber C.V. 1993. Capability Maturity Model for Software, Version 1.1, *IEEE Software*. 10(4), 18.

RIMS (Risk and Insurance Management Society). (2011). Why strategic risk management? Retrieved from:https://www.rims. org/resources/ERM/Documents/FAQ%20o n%20SRM%20and%20ERM%20FINAL%20A pril%2020%202011.pdf [Accessed 15 August 2015].

The Insurance Enterprise Risk Management Singapore Chief Risk Officers (CRO)'s Roundtable series (2013). Issue 1. Available from:http://www.ey.com/Publication/vwL UAssets/Insurance_Enterprise_Risk_Manag ement:_Singapore_CRO_Roundtable_Serie s/$FILE/EY-CRO-roundtable-series.pdf [Accessed 2 February 2014].

Songling, Y., Ishtiaq, M. and Anwar, M. (2018). Enterprise risk management practices and firm performance, the mediating role of competitive advantage and the moderating role of financial literacy. *Journal of Risk and Financial Management,* (11), 35.

Tabachnick, B. G., & Fidell, L. S. 2001. *Using multivariate statistics*. New York: HarperCollins.

Songling, Y., Ishtiaq, M. and Anwar, M. (2018). Enterprise risk management practices and firm performance, the mediating role of competitive advantage and the moderating role of financial literacy. *Journal of Risk and Financial Management,* (11), 35.

Tabachnick, B. G., & Fidell, L. S. 2001. *Using multivariate statistics*. New York: HarperCollins.

Setapa, M., Zakuan, N., Saman, M. Z. M., Ariff, M. S. M., Zaidin, N., & Sulaiman, Z. (2015). The Impact of Entreprise Risk management Practices on Malaysian Public Higher Education Institution Performance: A Literature review in 2015. International Conferemce on Industrial Engineering and Operational Management (IEOM, PP. 1-7