ENTERPRISE RISK MANAGEMENT: FACTORS ASSOCIATED WITH EFFECTIVE IMPLEMENTATION

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Abstract

Risk management is undergoing a great change, as organizations shift from the traditional and compartmental to an enterprise wide approach. Consequently, enterprise risk management (ERM) is gaining global attention among risk management professionals and academics. The demand for the adoption of ERM has led to several companies embracing it, yet its implementation has become challenging. Research shows that ERM approach emphasizes a holistic approach for assessing and evaluating the risks that an organization faces as against the "silo" approach of the traditional methods. The extant literature shows that through the reduction of the risk that an organization faces, ERM is capable of improving the performance and value. The study used a non-experimental correlational approach to explore the relationship between the presence of a chief risk officer (CRO) and an audit committee (AC), and the support of top management (TM) in relation to the implementation of ERM. A survey instrument was provided to self-identified risk-management professionals who are members of Survey Monkey Audience Service database. The target sample frame requested for analysis using a power of .95 was (n = 119). However, the final number analyzed was (n = 134). Frequencies and percentages were conducted on the demographic survey items and regression and correlational analyses were also performed. The study findings show that there was a significant relationship between the role of a CRO, the presence of an AC, and the support of TM and the level of ERM deployment. The study also found significant correlations between management support level and CRO, and AC. In addition, a much strong positive correlation was noted between the presence of a CRO and an AC.

Keywords: Enterprise Risk Management, Chief Risk Officer, Audit Committee, Top Management Support

1. INTRODUCTION

The current global financial crisis has seen the collapse of numerous international businesses due to inadequate or inappropriate risk management (Beasley, Branson, & Hancock, 2010; Brown, Steen, & Foreman, 2009; Power, 2009). Many organizational failures and financial disasters can be attributed to poor risk management (McConnell, 2009) and inadequate governance practices (Yeoh, 2009). Research indicates that, the percentage of business initiatives that are unsuccessful is remarkably high (e.g. Cozijnsen, Vrakking, & van Ijzerloo, 2000; Rizova, 2006; Wycoff, 2003). As a result, organizations have focused on remediating weaknesses in risk management systems to improve stakeholder protections (Bates, 2010; Paape & Speklé, 2012). Consistent with this, Berinato (2004, p. 48) observed that "balancing risk is becoming the only effective way to manage a corporation in a complex world."

Robust risk management has continued to be of great concern to practitioners, academics, and the business community because it augments organizational performance and creates value for shareholders (Dabari & Saidin, 2014). Inadequate risk management policies create adverse economic and social consequences for stakeholders as in Yamato Life Insurance, American International Group (AIG), Lehman Brothers, Fannie Mae, Freddy Mac, among others (Kerzner, 2009). Nocco and Stulz (2006) noted that poor risk management can result in large "dead weight" costs in organizations, which negatively affect organizational value. By reducing risk, a company can reduce the amount of expensive equity capital needed to support its operating risk cost.

Organizations are regularly confronted with issues of risk management as strategic decisions are made (Bromiley, McShane, Nair, & Rustambekov, 2014). Consequently, developing an institution-wide approach to proactively dealing with and optimizing emerging threats and opportunities cannot be over emphasized (Samanta, 2009). Effective risk management offers significant benefits to organizations, their projects, and their stakeholders (Didraga, 2013). Example effective risk management could potentially reduce variability in earnings and possibly minimize economic distress on an entity (Smith & Stulz, 1985). It also ensures that potential risks are identified, understood, and subsequently prioritized for better decision making which promotes the realization of strategic goals, lowers earnings volatility and subsequently increase

profitability (COSO, 2004; Gates, Nicholas, & Walker, 2012; Lin, Wen, & Yu, 2012).

As organizations expand, one of the keys to successful growth is steady risk management (Walker, Shenkir, & Barton, 2002). In order to yield benefits, risk management must be addressed and practiced at all levels of an organization (Hillson, 2005). For organizations to survive in this turbulent environment and gain competitive advantage, a holistic approach to handling risk needs to be adopted (Meagher & O'Neil, 2000; Stroh, 2005). Consistent with this, it's argued that holistic approach to risk management needs to be adopted (Stoke, 2004).

In the wake of increasing expectations that organizations employ successful risk management, a framework for managing risk called enterprise risk management (ERM) has been developed (Buchanan, 2004). This framework is gaining substantial momentum as a potentially effective response to managing risk and related challenges (Paape & Speklé, 2012). Regulators, professional associations, and rating firms are calling for the adoption of a consolidated risk management (Arena, Arnaboldi, & Azzone, 2010). This approach emphasizes a holistic and comprehensive approach for assessing and evaluating risks in an organization as opposed to the "silo" approach of traditional methods (Ai, Brockett, Cooper, & Golden, 2012; Arena et al., 2010; Bromiley et al., 2014).

While interest in enterprise wide risk management is high and several organizations have begun to utilize the framework, implementation has been challenging (Mikes, 2008; Power, 2009). In addition, there are few studies describing its successful implementations (Aabo, Fraser, & Simkins, 2005). Research examining the factors associated with its implementation in North America has largely focused on insurance and financial institutions (Beasley, Clune, & Hermanson, 2005; Bromiley, et al., 2014; Desender, 2011; Kraus & Lehner, 2012), with insufficient research in the management discipline (Bromiley et al., 2014). Similarly, in spite of the substantial interest in the holistic approach to managing risk on the part of academics and practitioners and the prevalence of collaborative risk management programs, there is limited empirical evidence regarding its impact on firm value (Hoyt & Liebenberg, 2011; Leech, 2002; Liebenberg & Hoyt, 2003).

In the literature, ERM has been used synonymously with integrated risk management, holistic risk management, enterprise-wide risk management, corporate risk management, and strategic risk management (Beasley et al., 2005; Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2004; Gordon, Loeb, & Tseng, 2009; Liebenberg & Hoyt, 2003; Nocco & Stulz, 2006; Pagach & Warr, 2011). Holistic risk management is often equated with the objectives of ERM (Borker & Vyatkin, 2012; Fraser & Simkins, 2010).

1.1. Background of the Study

Risk management as a formal part of the decision-making processes within organizations is traceable to the late 1940s and early 1950s (Dickinson, 2001). Managing risk is a fundamental concern in today's turbulent global environment (Berinato, 2004). In support of this assertion, Wu and Olson (2010) indicated that establishing acceptable levels of risk has become a critical strategy to boost performance and profitability in today's environment.

There has been a growing interest over the last decade in risk management, and the expectation of stakeholders concerning risk management have been rising at a rapid rate especially after the recent (2008) financial crisis (Gephart, Van Maanen, & Oberlechner, 2009; Paape & Speklé, 2012; Power, 2007). The crisis has exposed the weakness in the risk management practices, and organizations are under continuous and significant pressure to improve their risk management systems and adopt appropriate actions that will improve stakeholder value protection (Paape & Speklé, 2012). This pressure has led to a paradigm shift regarding the way risk management is perceived (Gordon et al., 2009).

Instead of looking at risk management from a silo-based perspective, ERM takes a holistic view of risk management. For this reason, it has gained substantial momentum as a potentially effective response to risk management challenges (Paape & Speklé, 2012). A holistic approach to managing risk can enable organizations to deal with risks and opportunities more effectively, enhancing the organization's capability to create and preserve value for stakeholders (Beasley, Pagach, & Warr, 2008; COSO, 2004; Lam, 2003; Liebenberg & Hoyt, 2003; Nocco & Stulz, 2006).

A general theory emerging from the literature is that the implementation of such a system improves organizational performance (COSO, 2004; Hoyt & Liebenberg, 2009; Lam, 2003; Nocco & Stulz, 2006; Paape & Speklé, 2012; Stulz, 1996). Gordon et al. (2009) argued that one factor driving practical and scholarly interest in enterprise wide risk management is the belief that it offers organizations a more comprehensive approach to risk management than the traditional silo-based risk management perspective. By adopting a systematic and consistent approach to managing the risk confronting an organization, this approach is presumed to lower an organization's overall risk of failure and thereby increase performance and subsequently the value of the organization.

Effective risk management systems equip organizations to withstand adverse effects caused by various environmental risks resulting in a steady stream of business opportunities that could potentially reduce variability in corporate earnings (Torben, 2009). In addition to preventing losses, effective risk management enables identification, development, and exploitation of opportunities (Torben, 2009) leading to the successfully pursue of greater risk and the creation of better competitive advantage (Galloway & Funston, 2000). However, in spite of the attention that this approach has received, little is known about the stages of deployments or factors that affect its acceptance within an organization (Beasley et al. 2005; Paape & Speklé, 2012; Waweru & Kisaka, 2013).

The general perceived problem that supports a need for the present study is the inability of organizations to effectively and efficiently manage risk, resulting in both failures and losses. The specific problem the study will investigate is the

inadequacy of organizational risk management practices aimed at improving organizational performance and potentially reducing or preventing losses. This problem is particularly important as improved performance results in the creation of value for shareholders (Nocco & Stulz, 2006). This study could also contribute to emerging research on corporate-wide risk management implementation and to risk management literature. The purpose of this research therefore is to study the factors associated with the effective implementation of holistic approaches to risk management as applied to various industries of finance, manufacturing, IT and telecommunication, insurance, business services, transport and logistics, government or non-profit, healthcare, energy or oil and gas industries, and other industries in North America. Previous research was mainly focused on the financial and insurance institutions.

The purpose of this correlational study was to assess the relationship between the role of a Chief Risk Officer (CRO), the role of an Audit Committee (AC), Top Management (TM) support and the implementation of organizational wide risk management. Paape and Speklé (2012) noted that there have been very few studies examining how different industries implement it. The results of their findings suggested that firms in the financial industry have a higher level of its implementation (Kraus & Lehner, 2012; Paape & Speklé, 2012). Along with banking and insurance firms, Beasley et al. (2005) found the educational sector to have an equally developed risk management program in place.

Another concern regarding the literature on holistic risk management is that the majority of the studies examining multiple industries were conducted in Europe (Paape & Speklé, 2012). Thus, it is important to conduct similar research in other parts of the world and across different organizations to enhance the generalizability of earlier findings. Unlike previous research, which mainly focused on financial and insurance institutions, the present study intends to investigate its implementation across several industries and in organizations of various sizes. In addition, the sample for the present study will include private, public, for profit, and non-profit organizations, unlike earlier research conducted.

1.2. Rationale

Beasley et al. (2010) posited that during the recent economic crisis some organizations failed because there was less focus on identifying, assessing, and managing their most important emerging risk. Other organizations failed because their aggressive pursuit of returns overshadowed under lying risk. In some situations, however, organizational leaders were blindsided by unknown risks, due to the lack of sufficient infrastructure to identify, assess, and monitor emerging risk within their enterprises (Beasley et al., 2010). The recent economic failures have therefore brought to light the consequences of ineffective risk management (Kleffner, Lee, & McGannon, 2003; Lam, 2001).

Poor risk management results in adverse economic and social consequences for stakeholders (Kerzner, 2009). According to McCafferty (2010), in the U.S. alone, approximately $63 billion is spent annually on IT projects that fail. However, even when risk management processes appear to have been effectively employed, many projects fail to meet their goals and fall short of stakeholders' expectations. Nocco and Stulz (2006) noted that poor risk management could result in large dead weight costs on organizations resulting in long-term reduction of value. By properly managing risks, an organization can reduce the amount of expensive equity capital needed to support its operating risks (Nocco & Stulz, 2006).

Corporate risk management can benefit organizations in a variety of ways. Taking a holistic approach to risk management allows organizations to decrease the level of volatility in earnings and stock price, reduce external capital costs, increase capital efficiency, and create synergies between different risk management activities (Beasley et al., 2008; Lam, 2001; Meulbroek, 2002). Kleffner et al. (2003) noted that the adoption of a holistic risk management approach enables a coordinated and consistent approach to managing risk, resulting in lower costs and better communication across an organization. A coordinated approach can also lead to the avoidance of losses as there will be a better approach to handle the overall risks.

Enterprise-wide risk management approach provides organizations with a framework for discipline as it enables management to deal effectively with the uncertainty associated with risks and opportunities (Stroh, 2005). This approach also allows organizations to assess the variability of target-performance levels with the view to enhancing value and providing transparency to shareholders (Stroh, 2005). Nocco and Stulz (2006) observed that a holistic risk management approach creates value for organizations through its effects on both macro (organization-wide) and micro (business-unit) levels. At the macro level, it creates value by enabling senior management to quantify and manage the organization's risk-return trade off. Consequently, the organization is able to maintain access to the capital market and other resources necessary to implement its strategy and business plan. At the micro level, holistic risk management becomes a way of life for project team members, and managers and employees throughout the organization (Nocco & Stulz, 2006).

Through increased communication, the collaborative perspective leads to a broader understanding and recognition of risk throughout the organization. It also ensures that all risks are *owned* and risk-return tradeoffs are carefully evaluated by operating managers and employees throughout the organization (Bowling & Rieger, 2005; Nocco & Stulz, 2006). An effective and efficient risk management approach has the potential to reduce compliance cost, improve operational performance, enhance corporate governance and deliver increased shareholder value (Bowling & Rieger, 2005; Cumming & Hirtle, 2001; Lam, 2001). In today's economy, effective risk management is a critical component of any winning management strategy (Ingley & van der Walt, 2008; Stroh, 2005).

The need for improvement in organizational risk management has received substantial attention from both practitioners and the field of academia

(Ingley & van der Walt, 2008; Kleffner et al., 2003; Kraus & Lehner, 2012; Nocco & Stulz, 2006; Paape & Speklé, 2012; Stroh, 2005). This study contributes to and extends the emerging research on holistic risk management adoption and implementation by studying organizational factors associated with its implementation in organizations. The study could also potentially contribute to academic risk management literature and the related body of knowledge.

1.3. Significance of the Study

The 2008 financial crisis has led to the call for extensive risk management in organizations (Hoyt & Liebenberg, 2011). The increased importance of a robust organizational-wide risk management practice is also attributed to the dynamic business environment characterized by threats emanating from political, economic, natural, and technical resources (Wu & Olson, 2010). Inefficient risk management has adverse economic impact on organizations and their stakeholders (Kerzner, 2009; Nocco & Stulz, 2006). An organizational wide risk management system facilitates a coordinated and consistent approach to managing risk within an organization, and thereby increasing productivity and value (Kleffner et al., 2003). It advocates a comprehensive approach to risk management, aligning with the organization's strategy while involving employees at all levels (Liebenberg & Hoyt, 2003). Also it provides a solid framework for handling uncertainty and its associated risk, and for assessing variability around target performance levels (Stroh, 2005).

Through increased communication, ERM yields a broader understanding throughout the organization and ensures that all risks are owned (Bowling & Rieger, 2005; Nocco & Stulz, 2006). A holistic risk management approach has the potential to reduce compliance cost, improve operational performance, enhance corporate governance, and deliver greater shareholder value (Bowling & Rieger, 2005; Cumming & Hirtle, 2001; Lam, 2001). Consistent with this observation, Byrnes Williams, Kamat, and Gopalakrishnan (2012) observed that organizations that have adopted a proactive risk management approach are able to practically deal with uncertainty and associated risk and opportunity, subsequently promoting brand value and profitability.

This study extends emerging research on risk management by examining organizational factors such as audit committee (AC), top management (TM) support, and chief risk officer (CRO) associated with its implementation. As a result, this study could potentially contribute to the body of knowledge and literature in risk management. In addition, this study could potentially benefit Practitioners considering the implementation of robust risk management systems. Gates et al. (2012) however cautioned that the study of ERM could be challenging as organizations are not under obligation to disclose details of their corporate risk management processes and stages.

1.4. Nature of the Study

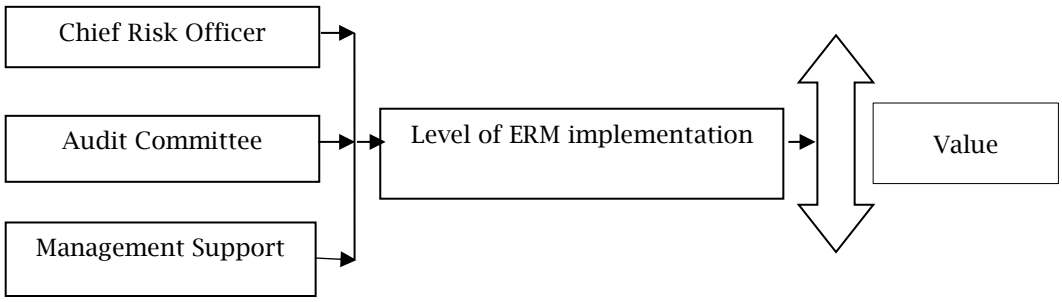
A correlational research approach was used to assess the relationship between the role of a chief risk officer (CRO), the role of an audit committee (AC), top management (TM) support and the implementation of enterprise risk management (ERM). According to Waweru and Kisaka (2013) several theories lend themselves for the study of holistic risk deployment. Examples include stakeholder theory, decision theory, agency theory, and contingency theory. This research was conducted from the organizational contingency model perspective. "Contingency theory is an approach to the study of organizational behavior in which explanations are given as to how contingent factors such as technology, culture and the external environment influence the design and function of organizations" (Islam & Hu, 2012, p.5159).

This theory suggests that an organization's effectiveness is dependent on its ability to adjust to the environment, and the need for congruency between environment and structure (Pennings, 1992). The main ideology of this theory is that there is no single best approach of doing things. The best and suitable approach is situation dependent (Alboali, Hamid, & Moosavi, 2013).

Similarly, a review of the extant literature on holistic risk management implementation in an organization revealed the use of various contingent variables (Daud & Yazid, 2009) such as firm size, industry type, TM support, presence of CRO, presence of AC, CG, auditor type, quality of the internal auditor, risk culture, board independence, ownership structure, board size, regulatory compliance, education and training, and cross-functional staff. Consistent with this observation, Gordon et al. (2009) noted that the determination of "key factors in contingency relations between a firm's ERM system and its performance is far from an exact science" (p. 303). Although, there is no common theoretical framework that determines the principal factors between an organizations strategic risk management system and performance, Gordon et al. observed that there is a general consensus that it is dependent on factors as indicated above. The characteristics of these variables however depend on the peculiarity of each location and their context (Dabari & Saidin, 2014).

In spite of the popularity of the contingency theory in research, critics are concerned about the adequacy of the underlying models employed (Moores & Chenhall, 1991). The goal was to explain how differences in contextual and structural dimensions are related. For effectiveness, Drazin and van de Ven (1985) and Islam and Hu (2012) maintained that context and structure must fit together. This study was based on this theory because, it continues to remain a dominant paradigm in management studies (Islam & Hu, 2012). Secondly, as indicated by Gordon et al. (2009), ERM has been studied from the contingency theory perspective by various authors (e.g. Chenhall, 2003; Gerdin & Greve, 2004, 2008; Gordon & Miller, 1976; Gordon & Narayanan, 1984; Mai & Chenhall, 1994; Otley, 1980; Waweru & Kisaka, 2013). Taking this approach, Figure 1 shows the expected relationship between factors influencing the level of its implementation.

Figure 1. The expected relationship between factors influencing the level of its implementation



The remainder of the research is organized as follows: The second section reviews the literature on enterprise wide risk management with a specific focus on implementation factors, benefits over traditional risk management, and relation to organizational performance. The third section provides a description of the research study and explores the variables. The data analysis and findings follows. Finally, the fifth section discusses the results in detail and presents the conclusions, recommendations, and the implications associated with the study.

2. LITERATURE REVIEW

2.1. Risk Management

Although risk can be viewed as the possibility of loss or exposure to loss, a hazard, an uncertainty, or an opportunity (Rosenberg & Schuermann, 2006), risk is ultimately a multilayered concept indicating that there is a great deal at stake for organizations (Smith & Mckeen, 2009). Risk is commonly measured on two scales: severity and frequency. Severity refers to the intensity or magnitude of loss or damage, whereas frequency is the likelihood of loss, damage, or a missed opportunity (Hampton, 2009). In this light, risk could be viewed as an opportunity or a threat. The management of risk and reward is challenging, as evidenced by the recent (2008 – 2009) economic crisis and its related uncertainty (Gordon et al., 2009).

The concept of organizational uncertainty has frequently been discussed in organizational theory, psychology, and economics (Petit & Hobbs, 2010). It has become more complex with a rise in the number and intensity, as a result, risk management is essential to organizational success (Ben-Amar, Boujenoui, & Zeghal, 2014). Risk management helps make the presence of risk in a firm's environment much clearer and more apparent, and management decides on the course of action based on the acceptability of each risk (Dia & Zéghal, 2008; McShane, Nair, & Rustambekov, 2011; Razali & Tahir, 2011). According to Ingley and van der Walt (2008), risk management is considered to be an integral part of an organization's strategic process and central to performance, competitive advantage, and shareholder and stakeholder value creation.

Risk management has been widely debated as firms and institutions adopt strategic risk management (McShane et al., 2011). In recent times, there have been significant changes in how risk is managed on an organizational level. Previously, it was managed in *silos*, where different organizational units handled risk independently (Lam, 2003). However, some practitioners believe that risks are interconnected and must be managed accordingly. Consequently, most failures associated with poor risk management can often be attributed to a convergence of multiple factors (Maingot, Quon, & Zeghal, 2013). There is not one correct approach for managing risk, but there appears to be some consensus about the need for the institutionalization of enterprise wide risk management (Bromiley et al., 2014; Maingot et al., 2013). Hence, it is emerging as a priority for most organizations (Altuntas, Berry-Stolze, & Hoyt, 2011).

2.2. The Portfolio Theory and Integrated Risk Management

he rationale behind a consideration of Portfolio theory before turning to ERM is based on the argument that Portfolio theory and holistic risk management are closely related. According to Alviniussen and Jankensgard (2009) it is believed that organizational-wide risk management is related to, and originated from the Portfolio theory proposed by Markowitz (1952) as they both suggest that risk should be managed on a portfolio basis. The goal of this theory is to minimize the overall impact of a given risk through a holistic management approach (Alviniussen & Jankensgard, 2009). Another proposition of this theory is that, the expected variance in the returns of a firm is best minimized by bringing the independent, non-interactive business units together (Rumelt, 1974 as noted by Lubatkim & Chatterjee, 1994).

The Portfolio Theory enables the determination of the highest return for a given level of risk (Sanchez, Benoit, & Pellerin, 2008). In other words, it enables the determination and selection of a portfolio with the lowest risk possible (Vaclavik & Jablonsky, 2012). The assumption of the modern Portfolio theory is based on the notion that, the effect of the overall risk in a portfolio is expected to be less than the impact of the individual risks (Markowitz, 1952). Consistent with this observation, Eckles, Hoyt, and Miller (2014) observed that by implementing an integrated risk management framework, an organization could combine its various risks into a risk portfolio resulting in an increased productivity and profitability through cost savings. Further developments and improvements of the Portfolio theory include; Postmodern Portfolio Theory, Stochastic Portfolio Theory, and Fuzzy Portfolio Theory (Vaclavik & Jablonsky, 2012).

2.3. Enterprise Risk Management

In the late 1980s, collaborative risk management emerged as an extension of hazard risk management, which posited that organizations must manage risk in a comprehensive, coordinated manner (Hampton, 2009). It is a complex concept that affects every major aspect of an organization (Hampton, 2009; Kimbrough & Componation, 2009). Dickhart (2008) asserted that for a risk management system to be effective, it must be able to coordinate the various sectors responsible for risks. According to Bowling and Rieger (2005), corporate risk management is the highest level of risk management in an organization, and it occurs when a holistic approach is adopted. At this level, related activities are linked to strategy and incorporated in daily business processes.

ERM is a new paradigm for dealing with organizational risk that allows policy makers to focus on ways to improve CG and general risk management (Beasley et al., 2005; Gordon et al., 2009). Global initiatives on CG, internal control, and risk management have driven the use of corporate wide risk management systems (Muralidhar, 2010). Consolidated risk management allows organizations to overcome limitations associated with traditional silo-based risk management practices (McShane et al., 2011). However, McShane et al. (2011) observed that in spite of its popularity, little is known about its effectiveness. Although, the extant literature suggests that ERM deployment leads to value creation, most of the systematic studies however failed to specifically indicate the components that lead to value creation (Kraus & Lehner, 2012). Similarly, although the findings in the literature suggest a correlation between ERM and value creation, Kraus and Lehner (2012) indicated that it is unclear which of these benefits are attributable to ERM or traditional risk management. In addition, Altuntas et al. (2011) posited that there was no consensus on a definition for it, involving specific management tools that make it more effective.

According to Power (2009, p. 853) "risk management designs like ERM are fundamentally unable to process and represent internal systematic risk issues, since this would require an imagination of externalities well beyond their design". Challenges associated with implementing holistic risk management systems include unsuitable organizational structures (OS), resistance to change, poor understanding of how to incorporate new risk management frameworks, and difficulty measuring risk (Kleffner et al., 2003). Beasley, Branson, and Hancock (2009) found that competing priorities, inadequate resources, an absence of TM support, and misconceptions that consolidated risk management complicates corporate bureaucracy result in low desire to implement it within organizations.

Consolidated risk management enables an organization to diligently work through a process of identifying and analyzing risks with the view to making informed decisions (Brown et al., 2009). It also facilitates open discussions of risks (Liebenberg & Hoyt, 2003) as they are effective in identifying, assessing, and monitoring organizational risk while ensuring effective communication (Beasley et al., 2009). Ben-Amar et al. (2014) noted that a collaborative risk management approach identifies, manages, and mitigates risk allowing organizations to capitalize on opportunities. A holistic risk management approach provides a framework for identifying circumstances that influence organizational objectives, evaluating risk prevalence, noting responses and strategies that attenuate risks, and establishing a process to monitor risks (Ben-Amar et al., 2014). Effective monitoring with an ERM system, enables organizations to detect, restrict, and rectify any discrepancies that would have affected its strategic decisions and for that matter its long term goals (Byrnes et al., 2012).

Holistic risk management can be viewed as a paradigm shift, in which senior executives and management realign organizational risk management (Gordon et al., 2009). Rochette (2009) maintained that due to the changing risk environment, any strategic risk management approach must cover a range of projects, processes, products, and services. Power (2009), however, argued that instead of focusing beyond the horizon and serving as a mechanism that challenges the way complex issues are assessed and managed by an organization, organizational wide risk management serves as a boundary perpetuating system of risk management.

ERM is usually described as comprehensive, integrated, complex, and cross-divisional (Liebenberg & Hoyt, 2003). Meagher and O'Neil (2000, p.10) described it as an "approach that is positive and proactive, value-based and broadly focused, embedded in processes, integrated in strategy and total operations, and continuous." A comprehensive risk management approach considers interdependencies as well as contradictory components of the risk management process (Borker & Vyatkin, 2012). It also identifies optimal objectives when dealing with internal issues (Kimbrough & Componation, 2009). The lack of a holistic risk theory has the potential to disrupt the development of an applied risk management system (Borker & Vyatkin, 2012).

According to Brown et al. (2009) ERM is the method and the process organizations use to management risk, seize opportunities, and achieve objectives. Stroh (2005) defined it as a way to identify risk factors in business, assess severity, quantify magnitude, and mitigate the downside exposure associated with risks while capitalizing on the upside opportunities. De Loach (2000) also defined it as a disciplined approach to align strategy, processes, people, technology, and knowledge, with the purpose of evaluating and managing uncertainty to create value. COSO (2004) noted that ERM is an approach for identifying and managing risk events, to be within an organizations risk appetite in order to provide reasonable assurance for achieving objectives. It is usually affected by board of directors (BOD), management, and other personnel in a strategic setting. Manab, Kassim, and Hussin (2010) referred to it as a rigorous system by which organizations can assess a number of variables simultaneously. In this study, COSO's (2004) definition will be adopted.

An integrated approach to managing risk demands commitment and support from leadership, requires all employees to be responsible for risk assessment and response, and utilizes a wide range

of tools and methodologies within a unifying framework (Manab et al., 2010). In collaborative risk management, risk is broadly defined to include any action that could prevent an organization from achieving its objectives. It reinforces employee involvement, with a focus on risk practices, and enables organizations to manage risks in an integrated, enterprise-wide fashion (Hoyt & Liebenberg, 2011). Gupta (2004) observed that this holistic approach of dealing with risk is rapidly emerging as a powerful approach to facilitate better decision-making as it provides a uniform approach to risk identification and measurement.

2.4. ERM versus Traditional Risk Management

Enterprise-wide risk management incorporates a comprehensive approach to risk management, aligning with the organization's strategy while involving employees at all levels (Liebenberg & Hoyt, 2000). Sobel and Reding (2004) argued that risk has holistic effects, creating the need for similar management. COSO's (2004) definition of organizational wide risk management addressed how risk is managed, providing a basis for application across organizations, industries, and different sectors. It also focused on achievement of objectives and provided a basis for defining its effectiveness.

According to Pagach and Warr (2011), this strategic approach of dealing with risk identifies and assesses risks an organization might encounter and examines potential control measures. Although these processes are consistent with a traditional risk management approach, certain variations exist. Managing risks separately as in the traditional approach, results in inefficiency due to the lack of coordination between departments. Advocates of institutional wide risk management find that by integrating decision-making across all risk types, organizations can avoid risk expenditure by exploiting natural hedges (Liebenberg & Hoyt, 2003). Hedging could be viewed as a traditional risk management activity that reduces the chances of financial distress on an organization (Smith & Stulz, 1985). Through the exploitation of natural hedges, holistic risk management reduces the extreme cost of capital and subsequently improves the performance and value of the organization (Nocco & Stulz, 2006). Separate risk- management activities can reduce earnings volatility from specific sources, but the holistic risk management aims to reduce volatility by preventing aggregation of risk across different entities (Hoyt & Liebenberg, 2011).

The traditional risk management approach is compartmentalized in organizations, whereas ERM usually involves a broader perspective, considering the various types of risk associated with organizational objectives (Borker & Vyatkin, 2012). It purports to gain a systemic perspective of the interdependence among risks (McShane et al., 2011). Instead of concentrating on a single risk, consideration is given to the risks that could impede a firm's objectives and value; it may not be possible to control all risks; however, sources of risk can be identified and managed in relation to the organization's overall objectives (Ben-Amar et al., 2014). Corporate risk management, unlike traditional risk management approaches (silo, department-by-department, or risk-by-risk approaches), requires an organizational-wide approach be taken in identifying, assessing, and managing risk (Kleffner et al., 2003). While the traditional approach to risk management mainly purports to protect an organization from financial losses, corporate risk management on the other hand considers risk management as a component of an organization's strategy, thereby allowing for better decision making (Liebenberg & Hoyt, 2003). The traditional approach has also caused excessive cost to organizations, and does not provide a clearer and comprehensive view of risk to management and BOD (Lam, 2000).

In addition, traditional approaches to risk management have not considered shareholder value and responsibilities to investors when making decisions (Meier, 2000). Collective risk management takes a much broader view of risk compared to the fragmented, silo-structured risk management at many organizations (Bowling & Rieger, 2005). An organizational wide approach of risk management also looks within and across organizational activities, in contrast to the silo approach to risk management (Bowling & Rieger, 2005). Whereas traditional risk management is largely concerned with protecting organizations against adverse financial effects, collaborative risk management allows for more wide-ranging risk-adjusted decisions that maximize shareholder value (Meulbroek, 2000).

Whereas individual risk management activities may reduce earnings volatility by reducing the probability of catastrophic losses, potential interdependencies between risks exist across activities that might go unnoticed in the traditional risk management model. Enterprise wide risk management, however, provides a structure that combines all risk management activities into one integrated framework enabling the identification of such interdependencies (Hoyt, & Liebenberg, 2011). Thus, whereas individual risk management activities limit earnings volatility from specific sources, an institutional wide strategy reduces volatility by preventing the aggregation of risk from different sources.

2.5. Antecedents of ERM Implementation

The implementation of strategic risk management is driven by a combination of external and internal factors (Kraus & Lehner, 2012; Lam, 2001; Liebenberg & Hoyt, 2003). The major external influences driving organizations to take a more holistic approach to risk management include a broader scope of risks associated with CG issues, institutional investor pressure, competitive advantage, technology advancement, increasing complexity of risk, and globalization (Miccolis & Shah, 2000; Rosen & Zenios, 2006), failures (Dickinson, 2001). Some internal drivers include maximization of shareholder wealth (Lam, 2001), market expectations, anticipated losses (Kraus & Lehner, 2012), BOD, ACs, internal audit, TM (Deloitte, 2008).

Other contributing factors are changes in investor regulations, heightened sensitivity to earnings volatility, and increased accountability by organizational boards (Kleffner et al., 2003). In addition, technological advancement in computer

software and increasingly sophisticated statistical and economic analytical models have made holistic risk management systems more viable (Green, 2001). Manab et al. (2010) maintained that CG and shareholder value are the motivational factors for corporate entities adopting and implementing it, and Miccolis and Shah (2000) identified the desire to maximize shareholder wealth as a primary external factor driving its implementation.

According to Kraus and Lehner (2012) the introduction of regulatory bodies and other frameworks such as Sarbanes Oxley Act (SOA) in 2002, Basel II in 2003, the Casualty Actuarial Society (CAS, 2003), the joint Australia/New Zealand Standard (AS/NZS, 2009), The New York Stock Exchange corporate governance rules (NYSE, 2009), the Dodd Frank Act (2010) have greatly influenced the adoption and implementation of a corporate wide risk management by organizations. Bowling and Rieger (2005) argued that the wide-spread implementation is increasing for two reasons. First, increased emphasis on CG and mounting compliance costs associated with the Sarbanes-Oxley Act of 2002 (SOA) are motivating factors. Second, the release of COSO's risk management framework has provided impetus for organizations by making its implementation easier. Galloway and Funston (2000) however opined that the two main drivers for the deployment of an ERM system are the creation of low risk management cost and the need to achieve competitive advantage.

Stroh (2005) noted that ERM is becoming an emerging standard, and based on these factors, it may well be the key to survival for many organizations. Increased global competition has created a shift in the emphasis of risk management from a defensive to a more strategic focus (Meulbroek, 2002). In this sense, effective risk management has become highly essential for all types of organizations (Manab et al., 2010). In spite of these driving factors, its implementation is usually faced with several challenges (Gates, 2006). According to Nocco and Stulz (2006), its implementation is not straight forward even though conceptually it appears to be. Altuntas et al. (2011) observed that, the success of an integrated risk management system is greatly depended on how efficiently it is implemented in an organization. Consistent with this observation, Nocco and Stulz (2006) observed that a major challenge in strategic risk management implementation is ensuring that both TM and business managers take proper account of risk return-tradeoff within an organization.

2.6. Adoption and Implementation of ERM

Byrnes et al. (2012) observed that the deployment of an ERM framework serve as a linkage between strategy, risk management, and corporate governance, consequently it is indispensable in the achievement of organizational goals. These authors therefore proposed that a proactive risk management system should;

- Incorporate risk management into business planning and decision making process
- Promote the identification of the various risk an organization faces and thereby establishing an appropriate risk management process.
- Perceive risk not just as a threat, but also as an opportunity and through that seek a balance between risk-reward tradeoffs.
- Promote the involvement of members of the entire organization
- Have an organizational-wide approach to risk monitoring and reporting, and corrections for the improvement of the risk management process.

It has been argued that a corporate risk management framework requires a top-down, holistic view of potentially critical risks that can undermine an organization's ability to achieve objectives (Beasley et al., 2009). Based on its holistic approach, it must be developed with stakeholders in mind, assessing the suitability of the approach for individual organizations (Bowling & Rieger, 2005). ERM has been discussed and debated for more than a decade, but implementation has been limited to only a few larger financial institutions (Bowling & Rieger, 2005; Paape & Speklé, 2012). Research on factors associated with its execution is limited (Beasley et al., 2005). Kleffner et al. (2003) noted that the poor adaptation rate of this new risk management paradigm could be due to uncertainty about how value is created, as well as how to optimize organizational goals and vision. As a result, Kleffner et al. noted that a strategic risk management system must be accompanied by a risk management culture to be successful.

Colquitt, Hoyt, and Lee (1997) found that enterprise wide risk management implementation depended on industry size and the individual(s) responsible for risk management. Liebenberg and Hoyt (2003) noted the presence of a risk office as driving the implementation of an integrated risk management framework in an organization. Kleffner et al. (2003) found that the risk officer, support of the BOD, and related regulations were key factors in the corporate inclusion of holistic risk management systems.

In 2005, Beasley et al. observed that ERM incorporation is positively related to the presence of a risk office, BOD independence, support of the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), presence of auditors, entity size, and type of industry (banking, education, and insurance industries). Bowling (2005) observed that the implementation of such a system is usually initiated as a result of compliance issues (CG). Yazid, Razali, and Hussin (2012) also suggested that its implementation was largely dependent on variables related to an organization's risk champion, leverage, profitability, turnover, internal diversification, size, and shareholders.

In extending the work of Liebenberg and Hoyt (2003), Pagach and Warr (2011) noted that, the implementation of a holistic risk management framework was supported by larger organizational size, presence of more volatile cash flow, and riskier stock returns. Furthermore, Paape and Speklé (2012) found that the extent of institutional wide risk management use within an organization was influenced by the regulatory environment, internal factors, ownership structure, and organizational and industry-related characteristics. Eckles et al. (2014) in their study concluded that the adoption of a strategic risk management system was related to the diversified nature of the organization, organizational size, and the returns on stock

volatility. Based on this observation, Paape and Speklé concluded that the factors associated with its implementation are globally similar.

2.7. Benefits of Holistic and Effective Risk Management

Risk management is a key driver of organizational performance, competitive advantage, and shareholder and stakeholder value creation (Ingley & van de Walt, 2008). In emphasizing the importance of the structural approach to risk management, Gates et al. (2012) noted that strategic risk management enhances management and improves organizational performance by leading to consensus among management and strengthening decision making and accountability. Rochette (2009) observed that an effective risk management system serves as a link between compliance and performance in CG. Through an effective risk management frame work, an organization's TM and BOD address potential risks during strategic planning (Beasley et al., 2009). Apart from considering the different categories of risk, corporate risk management regards each risk as part of an organization's overall risk portfolio managed holistically (Liebenberg & Hoyt, 2003).

Enterprise wide risk management also increases risk awareness and subsequently increases knowledge that leads to sound decision making throughout the organization (Kleffner et al., 2003). With traditional risk management, important risks can elude the attention of TMs (Drew & Kendrick, 2005). Drew, Kelley, and Kendrick (2006) observed that without an enterprise-wide approach to risk management, organizations can have an acceptable risk level, yet have an unacceptable combination of risk aversion and risk seeking. Management's ability to control risk can result in an organizational growth and increased investor confidence (Meier, 2000).

The success of a business entity depends on effective risk management as risk has the potential to impact organizational value (Archer, 2002). Holistic risk management benefits organizations by decreasing volatility of earnings and stock prices, reducing external capital costs, increasing capital efficiency, and creating synergy between different risk management activities (Beasely, Pagach, & Warr, 2001; Lam, 2001; Meulbroek, 2002). Kleffner et al. (2003) noted that such an approach enables a coordinated approach to managing risk, resulting in lower cost and better communication. This leads to the avoidance of losses, as overall risk management improves.

Consolidated risk management also provides a disciplined framework enabling management to deal with uncertainty; this framework includes associating risks and opportunities to assess variability around target performance levels that enhance value and provide transparency for shareholders (Stroh, 2005). Nocco and Stulz (2006) similarly observed that it creates value for organizations through its effect on both macro (company-wide) and micro (business-unit) levels. At the macro level, it creates value by enabling TM to quantify and manage risk-return tradeoffs. Thus, organizations are able to maintain access to capital markets and other necessary resources to implement their strategies and business plans. At the micro level, such as system becomes a technique for managers and employees to address risks at all organizational levels.

By increasing communication, collective risk management leads to an improved understanding of risk throughout the organization (Bowling & Rieger, 2005). This ensures that individuals take responsibility for all risks and operating managers and employees carefully evaluate risk-return tradeoffs (Nocco & Stulz, 2006). This system can also reduce compliance costs, improve operational performance, enhance CG, and deliver greater shareholder value (Bowling & Rieger, 2005; Cumming & Hirtle, 2001; Lam, 2001). In addition, a collaborative risk system increases the chance that an organization will achieve its goals by ensuring that the risk managed is within the scope of stakeholders' risk appetite (Beasley & Frigo, 2007). However, Bowling and Rieger (2010) noted that while organizations can use it to focus on improving corporate compliance and shareholder value, only a few have fully achieved these objectives.

An effective risk management framework has numerous benefits. It ensures organizations encounter fewer surprises, allows for enhanced planning and performance, promotes information processing and communication, improves accountability, and protects organizational and individual reputations (Brown et al., 2009). This strategic risk management system even reduces global risk by addressing opportunities and threats associated with supply chain relationships (Anold, Benford, Hampton, & Sutton, 2012). Paape and Speklé (2012) argued that even though prominent frameworks (such as the COSO framework) claim to represent "best practices", there appears to be no theoretical or empirical evidence about such claims. These authors believe that the ability of these frameworks in advancing sound risk management still remains unanswered. Abrams et al. (2007) however observed that the optimization of organizational operations and the elimination of duplicate business functions is critical for making a robust risk management system rewarding. Consequently, Pagach and Warr (2011) cautioned that many of these benefits are still debatable, and further research is needed.

The growing empirical research on ERM is not without limitations. For example, according to Bromiley et al. (2014) the issue of endogeneity and other related issues, especially of methodology make it challenging to draw a general conclusion about ERM's effectiveness. In addition, the extant literature has not adequately addressed inter-firm differences in entity-wide approach to risk management. To better understand these variations, it is recommended that further research be conducted on a contingency theory of ERM implementation (Mikes & Kaplan, 2013). Although, ERM is believed to be a potential remedy to the myriad challenges faced by organizations, Power (2009, p. 850) argued that this approach to risk management could be misleading in design for three reasons;

1. "That the enterprise-wide view and related notion of a singular organization risk appetite are highly problematic".
2. "Sources of these impoverishment lie in the deep complicity of ERM in the expanded significance of a logic of auditability".

3. That "the resulting expensive narratives of risk accountability have proven to be incapable of articulating and comprehending critical risks, particularly those associated with interconnectedness".

2.8. Measuring the Levels or Stages of ERM Adoption and Implementation

The implementation of an institutional wide risk system is a multilevel or stage process (Beasley et al., 2005; Waweru & Kisaka, 2013). There is limited research on the strategies for measuring the level or stage of ERM implementation (Waweru & Kisaka, 2013). Most of the approaches developed were by consulting firms (e.g. Standard & Poor, Deloitte) which are however not suitable for measuring the level of implementation in an organization (Waweru & Kisaka, 2013). In 2005, Beasley et al. developed an approach for measuring the level or stage of its deployment. This approach, unlike some of the others, which basically assumed that, an ERM system was either in place or not, measured implementation level or stage using an ordinal variable ranging from stages 1 – 5 as follows:

- Stage 1 = no plans present regarding implementation (i.e., risk management is usually incident-driven);
- Stage 2 = investigating or considering ERM and making a decision (i.e., there is the active control of risk in specific areas, e.g., health and safety, financial and project risk);
- Stage 3 = planning to implement (i.e., there is the identification, assessment, and control of risk in specific areas);
- Stage 4 = partial ERM in place (i.e., there is the identification, assessment, and control of strategic, financial, operational, and compliance risks in the process of implementing a complete system), and
- Stage 5 = complete ERM in place (i.e., there is identification, assessment, and control of strategic, financial, operational, compliance risks as an integral part of the strategic planning and control cycle).

This approach of measurement introduces some degree of subjectivity, however, it could be employed in different organizations (Waweru & Kisaka, 2013). Consequently, it has been used in other studies (e.g. Beasley et al., 2009; Daud Yazid, & Hussin, 2010; Daud, Haron, & Ibrahim, 2011; Waweru & Kisaka, 2013). This approach of assessing the level or stage of deployment will be adopted for this study.

2.9. Contingency Theory a Theoretical Background

The origin of the Contingency theory in organizational study is traceable to the 1950s (Hanisch & Wald, 2012; Rejc, 2003). This theory is broad, varies in form and implementation, and is applicable to various disciplines (Hanisch & Wald, 2012). The Theory "may best be described as a loosely organized set of propositions which are committed to some form of multivariate analysis of the relationship between key organizational variables as a basis for organizational analysis, and which endorses the view that there are no universally valid rules of organizing and management" (Burrell & Morgan, 1979 as noted by Rejc, 2003, p. 246).

According to Hanisch and Wald (2012), the seminal works of Woodward (1958), Burns and Staker (1961), and Lawrence and Lorsch (1967) set forth the argument that there was no single best approach to managing and organizing. The basic tenets of the Contingency theory are a) that all processes must fit the environment, and b) not all environments are the same. Howell et al. (2010) observed that for effectiveness, the various external challenges that an organization is presented with requires the application of different organizational characteristic; and "an optimal fit may require different organizational characteristics to suit different external conditions" (p.257).

The classic work of Burns and Stalker (1961) proposed two basic organizational structures. The first, a mechanistic structure, is characterized by centralized features and formal decision making. Mechanistic structures also have strict rules and top-down communication. Decisions are made at the top, and employees have a narrow set of responsibilities. The second type of organizational structure identified by Burns and Stalker was an organic structure, characterized by flatter features, informal communication lines, and flexible roles. In an organization with an organic structure, decision making is decentralized, and responsibility and authority are not as critical. When the structure of an organization is in line with elements of its contextual environment, the organization or its work units are seen to be effective; this is the perspective of the contingency theory (Teasley & Robinson, 2005).

van Donk and Molloy (2008) approached the Contingency theory through an organizational design perspective. In relating to the work of Mintzberg (1979), van Donk and Molloy (2008) observed that, the structure of an organization is greatly influenced by the contingency factors which, in turn correlates to the design elements. Thompson (1967) observed that uncertainty was the principal challenge to organizations, with changes in technology and environments being the contingency factors. Thompson proposed appropriate strategies of interactions and organizational design as remedies for such challenges. Similarly, Burkhardt and Brass (1990) noted changes in technology as the principal source of uncertainty in organizations. They discussed remedies using social structures and power.

The goal of contingency theory is to explain how differences in contextual and structural dimensions are related. This does not look at universal principles applicable in all situations, but instead purports to explain how one attribute or characteristic is dependent upon another (Vecchio as cited by Mullins, 2005). Similarly, the level of strategic risk management implementation in an organization is affected by several contingent variables such as: board independence, firm size, ownership structure, growth rate, support of TM, the CRO, the AC, CG, effective communication, organization risk culture, regulation, and industry type. These variables support the use of contingency theory for this study. The presence of a risk officer, CG, and TM support were used for this research, and are discussed further in the literature review.

2.10. Review of Related Factors for ERM Implementation

The CRO and ERM Implementation

Collaborative risk management strategy requires an individual or group of individuals at the senior management level who coordinate various framework processes (Lam, 2001; Waweru & Kisaka, 2013). The role of managers is critical in the implementation of effective risk management within organizations (Waweru & Kisaka, 2013). For this reason, risk officers are important influencers when implementing a corporate wide risk system. The key benefit of a risk champion is the ability to expand risk management responsibilities throughout an organization's leadership structure (De La Rosa, 2007). Such an executive works with other managers to set up a risk management system and disseminates risk information throughout the organization (COSO, 2004; Saeidi, Sofian, Rasid, & Saeid, 2012). The presence of a CRO can also reduce risk-related information asymmetry between shareholders (Beasley et al., 2008). As they are ultimately responsible for uniting all the risk management activities across the organization, risk officers reduce the duplication of efforts across the various sectors within the organization and increase an organization's efficiency (De La Rosa, 2007). To ensure effectiveness, a risk champion must develop a strategic understanding of an organization's core activities in both products and services (Rochette, 2009).

Rochette (2009) also demonstrated that strong written and oral communication skills, the ability to adapt to various conditions, good interpersonal and leadership skills, the ability to negotiate, and team-building skills are essential for CROs to be effective. This supported the assertion by De La Rosa (2007) that an effective and efficient risk champion is a generalist who advocates for team work and effective communication. As a strategic controller and advisor, the risk champion advises TM about risk, performance, and how capital investments can be made (Mikes, 2008). For an organizational wide system to be value-based, the role of such a champion is critical (Rochette, 2009). Demidenko and McNutt (2010) observed that when the CRO does not report to the entire BOD, information discrepancy about risk priorities can result.

Researchers studying the influence of the CRO on holistic system of handling risk have noted that the presence of a risk officer was related to the adoption and implementation of an institutional wide approach of managing risk (Beasley et al., 2005; Hoyt & Liebenberg, 2008; Kleffner et al., 2003; Liebenberg, 2003; Liebenberg & Hoyt, 2003; Pagach & Warr, 2011; Waweru & Kisaka, 2013). Similarly, Daud et al. (2010) contended that the quality of the risk champion influenced collaborative risk management implementation and its related practices. Consistent with this assertion, Saeidi et al. (2012) observed that the presence and quality of the risk officer strongly correlated with enterprise risk management strategy. However, it should be understood that the risk officer is not the risk owner, but instead the facilitator of the risk system, so there is a need for the risk champion to coordinate with other risk specialists (Rochette, 2009). To do this, the risk champion establishes a risk management framework to determine how identified risks will be managed (Mikes, 2008). The risk officer must have an understanding of critical strategic uncertainties and be able to communicate that understanding to management (Mikes, 2008).

The presence and influence of the risk officer in an organization promotes the adoption and implementation of an effective risk management system (Beasley et al., 2005). The presence of such an executive also indicates an organization's serious desire to implement risk management strategies (Rochette, 2009). The risk champion is ultimately responsible for uniting all risk management activities across the organization and reducing the duplication of efforts across the various sectors within the organization (De La Rosa, 2007). Liebenberg and Hoyt (2003) observed that although the presence of a risk champion suggested enterprise wide risk management usage, the reverse however, did not suggest the absence of such a system. Liebenberg and Hoyt simply concluded that creating a risk champion's position signified the degree of commitment to organizational wide risk management. Pagach and Warr (2007) opined that organizations engaging a risk champion in the implementation of corporate risk management sometimes did so as a response to poor stock performance. They added that such organizations tend to be less opaque (more prone to stock price crushes) with fewer growth options. In other words, organizations "with more opaque assets and more" chances of expansion were less likely to engage a CRO (p. 3).

The CRO is an important proxy noted in the literature as being necessary for the deployment of a consolidated risk management system. However, the use of a CRO as a sole indication of the readiness for the deployment of a robust risk management system (e.g. Aabo et al., 2005; Beasley & Hoyt, 2003; Beasley, Pagach, & Warr, 2008; Liebenberg & Hoyt, 2003; Pagach & Warr, 2010) could be misleading and needs to be done with caution, as this could potentially result in the oversight of critical ERM activities such as idiosyncratic risks (Kraus & Lehner, 2012). Liebenberg and Hoyt (2003) observed that there was no agreement about the structure of the entity that should oversee the implementation of an ERM framework within an organization. While some proponents advocate having a risk champion, others recommend the use of risk management committees. Taking an alternative approach, Hanbenstock suggested that risk should be managed through a single organizational unit (as cited in Liebenberg & Hoyt, 2003).

Audit Committee (AC) and ERM Implementation

In an uncertain global environment, the AC is critical for organizational success (Lloyd & Fanning, 2007), and it plays a significant role in risk management (Livingston, 2005). Paape and Speklé (2012) indicated that ACs are essential in the oversight of risk management practices. Demidenko and McNutt (2010) clarified that ACs spend time assessing risk instead of monitoring the risk management process, and Carcello, Hermanson, and Ye (2011) noted that ACs and BODs internally monitor the financial

reporting from TM in order to mitigate potential financial risk.

The AC is responsible for issues related to the relationship between the organization and its auditors (Taher & Boubaker, 2013). According to the National Commission on Fraudulent Financial Reporting, ACs create a platform where directors, management, and auditors can coordinate issues pertaining to risk management and financial reporting (as cited in Turley & Zaman, 2004). The AC is able to influence the BOD to ensure that risk management processes are allotted attention and resources in order to be successful (Paape & Speklé, 2012). The AC is also instrumental in promoting CG principles to safeguard public interest (Szczepankowski, 2012; Vasile & Croitoru, 2013). Szczepankowski (2012) further observed that the formulation of effective management practices requires a congenial relationship between the AC, CG, shareholders, and management. Ho, Lai, and Lee (2013) asserted that ACs must be independent and financially knowledgeable; however, Brown et al. (2009) argued that ACs did not necessarily need to be knowledgeable in finance, as risk is not limited to that realm.

Organizational effectiveness can be enhanced by good CG and the AC process (Szczepankowski, 2012). The effectiveness of the AC is largely dependent on the BOD, and it is vital for organizations to maintain sound controls and ensure the strong presence of independent auditors (Cohen, Krishnamoorthy, & Wright, 2007). Hundal (2013) observed that the AC has an important responsibility to review financial information on a continuous basis to promote reliability and ensure organizations maintain strong control mechanisms. Beasley et al. (2005) suggested that organizations with high-quality auditors might be more devoted to effective risk management. Others have argued that auditors can be persuasive in encouraging clients to improve their risk management practices (Paape & Speklé, 2012).

It is sometimes difficult for the AC to be independent and unbiased, especially in instances where committee selection is based on the influence of management or members of the BOD (Beaseley, Carcello, Hermanson, & Neal, 2009). In view of this, ACs might not satisfy the interest of shareholders (Cohen, Gaynor, Krishnamoorthy & Wright, 2011). García, Barbadillo, and Parez (2012) observed that ACs composed of independent, external members were more likely to be accountable and transparent as autonomy reduces or prevents potential interference and manipulation from TM.

For effectiveness of the AC, Brown et al. (2009) suggested the establishment of a risk management committee separate from the AC as well as an interface between the AC and the BOD. The risk management committee is responsible for reporting to both the BOD and the AC. According to Brown et al. (2009), members of the risk management committee could be individuals from various departments including finance, compliance, human resources management, logistics, quality control and assurance, research and development, or production.

An effective AC can be influential in resolving disputes, as they tend to be unbiased towards the shareholder and supportive towards the auditor (Cohen et al., 2011). The CEO's influence on an auditor's judgment depends on AC effectiveness, and the effectiveness of the AC is influenced by the frequency of meetings (Garcia et al., 2012). These and many other roles of the AC require their independence (Szczepankowski, 2012).

Brown et al. (2009) observed that the AC could be limited in its risk management oversight for several reasons including but not limited to:

- Being overburdened with several responsibilities,
- Focusing on the oversight of financial reporting and other compliance issues instead of on a wider scope of risk management
- Having to deal with the presence of discrepancies in the requirements of the AC
- The risk factors an organization faces being better understood by members of an organization rather than outsiders.

It has been suggested that the AC has significant influence on external and internal controls (Turley & Zaman, 2004). Turley and Zaman (2004) found that ACs were responsible for overseeing management's assessment of business risk as well as management's capability of both identification and assessment of potential risk. Bostrom (2003) recommended that the BOD regularly receive reports from the AC and assess identified risks and recommendations (as cited in Ingley and van de Walt, 2008). In addition, ACs can influence an organization's financial reporting systems, the extent of the organization's disclosures, and the organization's adherence to policies and practices (Turley & Zaman, 2004). AC independence also improves accounting information and market value of an organization (Hundal, 2013).

The presence of an AC can potentially improve performance through enhancement of appropriate management and governance structures (Turley & Zaman, 2004). Menon and Williams argued that the existence of an AC does not necessarily indicate effectiveness, nor does it suggest that the BOD rely on the AC to enhance effective monitoring (as cited in Turley & Zaman, 2004). In addressing this point, Szczepankowski (2012) cited Kajola observation that the presence of an AC does not contribute positively to firm development. Turley and Zaman (2004) argued that the presence of an AC can reduce weaknesses in governance but that there is no relationship between the presence of an AC and achievement of specific governance effects. Similarly, Cohen et al. (2004) argued that ACs are ineffective and lack the power to ensure governance mechanisms.

Larger ACs may be ineffective in executing their duties when compared to smaller committees (Garcia et al., 2012). Szczepankowski (2012) noted that a small AC can improve the effectiveness of an organization versus a larger one. It has been suggested that larger ACs could result in poor communication and poor decision-making, and could be difficult to control. When discussing AC effectiveness, Lipton and Lorsch (1992) recommended seven to nine individuals as ideal. However, Buchalter and Yokomoto (2003) contended that an effective AC must be made up of an average of three to five members. According to Szczepankowski (2012), research has indicated a positive correlation between the size of the AC and

performance; however, Yermack (1996) noted a negative correlation between AC size and the profitability of an organization.

TM Support and ERM

Felekoglu and Moultrie (2014) observed that TM involvement and support are often used interchangeably. Similarly, TM and senior management are also used interchangeably, so for the purpose of consistency in this study, TM support will be used. Enterprise wide risk management implementation can encounter setbacks and even fail. De La Rosa (2007) identified some potential causes of setbacks as a lack of buy-in from TM and oversight committees such as the AC, a lack of theoretical risk knowledge, a poorly customized approach, a poorly defined language, an inappropriate oversight structure, insufficient resources, insufficient supervision, the inability to maintain the momentum of the implementation, and a poor tone at the top.

In the wake of the 2008 economic crisis, risk management has become a major concern of TM (Schneider, Sheikh, & Simione, 2012). Consistent with this, Beasley et al. (2009) observed that there has been a significant increase in the requests for TM to fortify oversight in risk management. According to Jarvenpaa and Ives, TM support involves the participation of executives or TM (as cited in Komala, 2012). Felekoglu and Moultries (2014) argued that TM support is vital as TM hold the primary decision-making responsibilities within an organization. TM are influential because of their authority, and they are more likely to overcome potential resistance (Keen, 1981). TM support could result in the availability of appropriate resources for the execution of new projects (Rodriguez, Perez, Juan, & Gutierrez, 2008). Scholars agree that effective risk management initiatives cannot succeed without TM support (Beasley et al., 2008; Walker et al., 2002). Davenport observed that with strong TM commitment, many endeavors could be successful (as cited in Ifinedo, 2008).

TM can influence knowledge sharing and learning through the creation of appropriate climate, culture, and resources (Lin, 2007). Lin (2007) explained that through knowledge donation and collection, an organization is able to enhance its innovation abilities. Effective TM support influences the setting of organizational values and encourages the development of appropriate management styles in order to enhance the performance of an organization (Chen & Paulraj, 2004). Pringle and Kroll asserted that TM's implementation of new programs usually signals the importance of the programs, which can promote team commitment (as cited in Salomo, Keinschmidt, & De Brentani, 2010).

The effectiveness of a management system is closely related to the integrity and ethical values of TM (Demidenko & MuNutt, 2010). Andrews and Beynon (2011) observed that the processes and environment within an organization influence TM's ability to achieve their goals. Cohen, Krishnamoorthy, and Wright (2004) asserted that an effective AC requires a strong organizational charter, as well as TM cooperation and support. TM support greatly enhances organizational performance (Khan, Lederer, & Mirchandani, 2013). In short, TM support is critical for organizational success (Ragu-Nathan, Aigian, Ragu-Nathan, & Tu, 2004).

Enterprise-wide risk management is strategic and thus cannot succeed without TM support (Bowling & Rieger, 2005). Andriole (2009) argued that in the absence of TM support, opportunities can be missed and projects can fail. According to Tiller (2012), strong leadership and management support creates success for most strategies, and organizations that satisfy stakeholders and maintain profitability must promote it. Consequently, TM must participate in the early stages of implementing a collaborative risk management system (Bowling & Rieger, 2005). Zwikael (2008) cautioned, however, that the effectiveness of TM support may vary across industries and organizations.

According to Ingley and van de Walt (2008), organizational boards and TM must ensure that mechanisms enhance standards of cost, codes of conduct, and other required policies. Management impacts the CG mechanism through influence on board appointments and information shared with members (Cohen et al., 2007). The effectiveness of a CG structure for achieving objectives requires support of TM and leadership (Vasile & Croitoru, 2013).

Sharma and Yetton (2003) ascribed that in the context of low task interdependence, TM support regarding collective risk management implementation success was low, while conversely, TM support had a significant impact on implementation success with high task interdependence. TM perception about risk could influence cooperation, trust, and commitment in terms of performance (Rodriguez et al., 2008). Rodriguez et al. explained that a favorable TM attitude towards risk encourages various departments to undertake more tasks. Beasley et al. (2008) observed that TM played a critical role in the success of any effective risk management system. TM support facilitates the integration of risk management philosophy and strategy across the organization. Finally, the nature, scope, and impact of corporate risk management must have strong support from TM in order to be successful (Walker et al., 2002). Employees of an organization are likely to accept and adopt an enterprise wide risk management system when it is noted that TM and BOD are supportive and actively involved in the risk management process (Brown et al., 2009). Hence, for any collaborative risk management framework to succeed, it is critical that the entire organization gets involved.

3. METHODOLOGY

3.1. Research Design

A non-experimental (correlational) approach was used to explore the presence of a chief risk officer (CRO) and an audit committee (AC), and the support of top management (TM) in relation to the implementation of enterprise risk management (ERM). This was used to assess the relationship among variables (Creswell, 2012). The use of the non-experimental approach is consistent with the works of researchers such as Arnold, Benford, Hampton, and Sutton (2012); Beasley et al. (2005);

Beasley et al. (2007); Gordon et al. (2009); Hoyt and Liebenberg (2011); McShane et al. (2011); Paape and Speklé (2012); Pagach and Warr (2010); Tahir and Razali (2011), and Waweru and Kisaka (2013).

The correlational research approach placed emphasis on methodology, procedure, and statistical measures of validity, as such a method depends on both measurement and analysis of statistical data to produce quantifiable deductions and conclusions (Eldabi, Irani, Paul, & Love, 2002). A survey instrument was provided to pre-screened self-identified risk-management and other related professionals (e.g., CFOs, CROs) who are members of SurveyMonkey Audience Service database and met the inclusion criteria. Survey Monkey Audience Service was chosen because it provides a random sample which increases generalizability of the results (Creswell, 2009).

The survey instrument was used to obtain data on the level of agreement or disagreement about ERM elements. The data collected was imported into statistical package for social sciences (SPSS) software for further analysis to determine any possible statistical relationship between the independent and depend variables.

Descriptive frequencies and chi–square tests were used in this study. In addition, logistic regression was used for further analysis of the data as it was suitable for describing and testing hypotheses about the relationships between the categorical outcome variable and the predictor variables (LaValley, 2008; Peng, Lee, & Ingersoll, 2002). "Logistic regression is a multiple regression but with an outcome variable that is a categorical variable and a predictor variable that is continuous or categorical" (Field, 2009, p. 265). Logistic regression, unlike other forms of regression allows the prediction of categorical outcomes based on predictor variables (Field, 2009).

This study involved a categorical outcome variable and three predictors which were also categorical, making logistic regression an appropriate model for addressing the research questions. Also, because the categorical outcome variable was of ordinal measurement, logistic regression appeared to be appropriate. In logistic regression, if the outcome variable has more than two categories as in this study, it is known as multinomial logistic regression (MLR). A great benefit to the use of MLR is that it does not assume a linear relationship between the variables (Tabachnick, Fidell, & Osterlind, 2001). MLR is capable of generating more suitable findings with respect to model fit and correctness of the analysis irrespective of any assumption (Das & Gope, 2014).

For each null hypothesis, a regression analysis was used to determine the relationship, if any, between the dependent and independent variable. A correlational analysis was also conducted to determine the strength and direction of the relationship between theses variables. Using a probability (p) value of .05, a null hypothesis was either rejected or accepted. It was accepted if p was greater than .05 (i.e. $p > .05$) while it was rejected if p value was less than .05 (i.e. $p < .05$). In addition, correlations were performed to assess the relationship between the independent variables using a p value of .01.

3.2. Sample

The population for this study consisted of risk management and risk related professionals from various sectors (e.g. finance, manufacturing, IT and telecommunication, insurance, business services, transport and logistics, government or non-profit, healthcare, energy or oil and gas industries, and other industries) in North America. The sample frame were self-identified risk management and risk related professionals within the SurveyMonkey Audience data base. The inclusion criteria were professional engaged in risk management and risk related activities. Respondents were also required to able to read and comprehend English and were 18 years of age or above.

The process of recruiting and sampling for this study was undertaken by SurveyMonkey Audience who sent out invitations to respondents who met the inclusion criteria to voluntarily participate. Self-administered surveys were used for quick and reliable feedback (Cooper & Schindler, 2006). A random sampling method was used, giving each member of the sample frame an equal and independent chance of being selected (Bartlett, 2005). The use of SurveyMonkey Audience Service was expected to result in the randomness required for rigorous data collection. The purpose of seeking a random sample was to obtain a representative sample (Trochim, 2001; Orcher, 2005). This made the responses statistically valid and representative subset of the target population (Kitchenham & Pfleeger, 2002; Leedy & Ormond, 2009). To minimize sampling errors, the following were done; a good sample frame was selected; a large sample was selected; an instrument with clear and straight forward questions was employed; and rigorous survey administration procedure was adopted (Creswell, 2012). In the determination of the needed sample size, the present research, adopted the G*Power 3 approach, as it was a stand-alone analysis program used in numerous research studies (Faul et al., 2009).

3.3. Data Collection

The Survey Monkey audience service was used to obtain a sample of the target population. The survey link included informed consent information and participants were informed of their right to opt-out of the study. The survey was administered on the internet using Survey Monkey, and completion of the survey was used as confirmation of participant consent. The duration of the data collection period was two weeks, after which time the response rate had declined and the minimum study sample was reached. The data was subsequently downloaded from the Survey Monkey web site for analysis onto a secure computer and processed with Predictive Analytics Software (PASW) Statistics 18 software that was purchased from SPSS, Inc.

Through SurveyMonkey Audience Service, a total of 134 valid responses were received. This was more than the minimum of 119 needed for the study. The questionnaire gathered information about ERM adoption and implementation in participants' organizations. The response data was downloaded to an excel spread sheet, and coded

appropriately in preparation for analysis using the SPSS software tool.

3.4. Data Analysis

The statistical package for social sciences (SPSS) was used to analyze the data collected. Descriptive statistics were used to display results. This included percentages, frequencies, *z*-tests, chi–square tests, and independent *t*-tests. In addition, logistic regression was used for further analysis of the data as it was suitable for describing and testing hypotheses about the relationships between the categorical outcome variable and the predictor variables (LaValley, 2008; Peng, Lee, & Ingersoll, 2002). This approach was consistent with previous research (e.g. Beasley et al., 2005; Beasley et al., 2007; Gordon et al., 2009; Tahir & Razali, 2011; Waweru & Kisaka, 2013).

Secondly, it does not violate any assumptions involved in regression for a categorical dependent variable (Vogt, 2007). In this current study, the dependent variable (extent of ERM implementation/ STAGE) was measured on an ordinal scale, and the independent variables were categorical, hence logistic regression was deemed appropriate for hypotheses testing and was subsequently used to answer the research questions.

Prior to analysis, the scores of the outcome variables were typically transformed using natural logs of odds (Vogt, 2007). Cronbach's alpha was used to analyze the survey constructs for internal consistency and reliability. In addition, extreme responses (e.g., outliers) from the data analysis were excluded (Cohen, Manion, & Morrison, 2007).

For Research Question 1, regression analysis was used to determine the relationship, if any, between the presence of a Chief Risk Officer (CRO) and the implementation of ERM. A correlational analysis was also conducted to determine the strength and direction of the relationship between the presence of a CRO and the stage of ERM implementation.

For Research Question 2, a regression analysis was conducted to examine the extent to which the presence of an Audit Committee (AC) influenced the implementation of ERM. A correlational analysis was conducted to determine the strength and direction of the relationship between the presence of an AC and the stage of ERM implementation.

For Research Question 3, regression analysis was conducted to determine the extent to which, Top Management (TM) support predicted the stage of ERM implementation. Similarly, a correlational analysis was conducted to determine the strength and direction of the relationship between the presence of Top Management and the stage of ERM implementation. Statistical analyses that were used for the research questions are shown in Table 2 below.

Table 1. Variables and statistics for Research Questions

Research question	Variables	Analysis
R_1. What is the relationship, if any, between the presence of a Chief Risk Officer (CRO) and the implementation of ERM?	Independent variable: Presence of CRO Dependent variable: Stage of ERM implementation	Logistic regression, Correlation
R_2. What is the relationship, if any, between the presence of an Audit Committee (AC) and the implementation of ERM?	Independent variable: Presence of AC Dependent variable: Stage of ERM implementation	Logistic regression, Correlation
R_3. What is the relationship, if any, between Top Management (TM) support and the implementation of ERM?	Independent variable: TM support (Level of management support) Dependent variable: Stage of ERM implementation	Logistic regression, Correlation

3.5. Validity and Reliability

In order to address internal consistency in this study, Cronbach's Alpha was determined using SPSS and subsequently used as a measure for assessing the quality of the data collected. For this study, the Cronbach's Alpha values were .70 for CRO, .70 for AC, and .73 for TM. These values suggested that a reliable measurement was used (Nunnally, 1978; Vogt, 2007).

4. RESULTS

The purpose of this study was to assess the relationship between the role of a Chief Risk Officer (CRO), the role of an Audit Committee (AC), Top Management (TM) support and the implementation of organizational wide risk management. The following primary research questions were addressed in this study:

RQ1 What is the relationship, if any, between the presence of a Chief Risk Officer (CRO) and the implementation of enterprise risk management (ERM)?

RQ2 What is the relationship, if any, between the presence of an Audit Committee (AC) and the implementation of enterprise risk management (ERM)?

RQ3. What is the relationship, if any, between Top Management (TM) support and the implementation of (enterprise risk management) ERM?

The target sample frame requested for analysis prior to the survey using a power of .95 was (n = 119). However, the final number analyzed from random respondents generated from SurveyMonkey Audience Service was (n = 134). Initially, a total of 159 responses were collected, of which 25 were removed from the data because they were incomplete, resulting in a total of 134 responses.

Table 2 displays participants' industry of employment which varied across the demographic for the sample.

Table 2. Participants' industry of employment

Industry	Response frequency(n)	Percentage (%)
Insurance	10	7.5
Transport & logistics	2	1.5
Manufacturing	14	10.5
Business services	28	20.9
Information technology(IT)	15	11.2
Energy/Oil & gas	4	2.9
Healthcare	9	6.7
Government	8	5.9
Not for profit	9	6.7
Education	7	5.2
Hospitality	1	0.8
Defense	3	2.2
Banking and finance	12	8.9
Legal	1	0.8
Construction	4	2.9
Engineering	5	3.7
Real estate	1	0.8
Utilities	1	0.8
Total	134	100.0

The survey results indicated that the business services group were the majority (n = 28, 20.0 %) and hospitality, legal, real estate, and utilities were the minority (n = 1, 0.8%) each. Two respondents (1.5%) were in the transport and logistic industry. Defense had three (2.2%) participants, energy/oil & gas and construction sector each had four participants (2.9%), engineering five (3.7%) respondents, education seven (5.2%) participants, government eight (5.9%), not for profit and healthcare groups both had the same representation (n = 9, 6.7%) and the insurance sector ten (7.5%). The rest were the banking and finance sector represented by 12 (8.9%) participants, manufacturing 14 (10.5%) and the information technology sector 15 (11.2%). Table 3 represents the various categories of respondents' job function or position.

Table 3. Participants Job Function/Position

Job function/position	Response frequency(n)	Percentage (%)
Chief executive officer (CEO)	7	5.2
Chief financial officer (CFO)	3	2.2
Executive management team	39	29.1
Internal auditor	9	6.7
Chief risk officer (CRO)	4	3.0
Staff	48	35.8
Other	24	17.9
Total	134	99.9

Majority of the respondents were regular staff members (n = 48, 35.8%) and the minority were CFOs (n = 3, 2.2%). The remaining respondents were CRO (n = 4, 3.0%), CEO (n = 7, 6.7%), other (n = 24, 17.9%). This group was diversified comprising job functions such as: analysts, business development managers, process engineers, and educators.

Table 4. Presence of a Chief Risk Office

Presence of CRO	Response frequency (n)	Percentage (%)
Yes	78	58.2
No	56	41.8
Total	134	100.0

Seventy-eight (58.2%) participants noted their organization had a CRO, while 56 (41.8%) indicated there was no CRO. Table 5 shows the presence of an AC in participants' organization.

Table 5. Presence of an audit committee

Presence of AC	Response frequency (n)	Percentage (%)
Yes	89	66.4
No	45	33.6
Total	134	100.0

Eighty-nine (66.4%) respondents indicated an AC was present in their organization, while 45 (33.6%) noted there was none in their organization. Table 6 displays management support for risk management.

Table 6. Management communicating about being in control of risk

Response	Response frequency (*n*)	Percentage (%)
No, no such statements	46	34.3
Yes, in the field of financial reporting	47	35.1
Yes, on all risk areas (such as; strategic, operational, financial reporting, and compliance)	41	30.6
Total	134	100.0

Forty-one (30.6%) of the participants indicated management supported and communicated about the need of being in control of all categories of risk in their organization. Forty-seven (35.1%) also indicated management was supportive, but communicated mainly about financial reporting. Forty-six (34.3%) however noted management was not supportive and there was no communication about risk management.

Table 7. Stage of ERM implementation

ERM implementation stage/level	Response frequency (n)	Percentage (%)
Stage 1	28	20.9
Stage 2	37	27.6
Stage 3	40	29.9
Stage 4	15	11.2
Stage 5	14	10.5
Total	134	100.0

Table 8. Organizational Stage of ERM deployment

Sector	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Total Respondents (n)
Insurance	7.1% n = 2	0.0% n = 0	7.5% n = 3	13.3% n = 2	21.4% n = 3	10
Transport & Logistics	0.0% n = 0	0.0% n = 0	5.0% n = 2	0.0% n = 0	0.0% n = 0	2
Manufacturing	10.7% n = 3	13.5% n = 5	7.5% n = 3	13.3% n = 2	7.1% n = 1	14
Business services	25.0% n = 7	21.6% n = 8	22.5% n = 9	13.3% n = 2	14. 3% n = 2	28
IT	7.1% n = 2	13.5% n = 5	15.0% n = 6	13.3% n = 2	0.0% n = 0	15
Energy/Oil & gas	3.6% n = 1	2.7% n = 1	0.0% n = 0	6.7% n = 1	7.1% n = 1	4
Health	3.6% n = 1	10.8% n = 4	2.5% n = 1	6.7% n = 1	14.3% n = 2	9
Sector	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**	**Stage 5**	**Total Respondents (n)**
Government	0.0% n = 0	13.5% n = 5	5.0% n = 2	0.0% n = 0	7.1% n = 1	8
Not for profit	7.1% n = 2	2.7% n = 1	12.5% n = 5	6.7% n = 1	0.0% n = 0	9
Utilities	3.6% n = 1	0.0% n = 0	0.0% n = 0	0.0% n = 0	0.0% n = 0	1
Education	0.0% n = 0	0.0% n = 0	12.5% n = 5	6.7% n = 1	7.1% n = 1	7
Hospitality	0.0% n = 0	0.0% n = 0	2.5% n = 1	0.0% n= 0	0.0% n = 0	1
Defense	3.6% n = 1	0.0% n = 0	2.5% n = 1	6.7% n = 1	0.0% n = 0	3
Banking and finance	10.7% n = 3	10.8% n = 4	5.0% n = 2	6.7% n = 1	14.3% n = 2	12
Legal	3.6% n = 1	0.0% n = 0	0.0% n = 0	0.0% n = 0	0.0% n = 0	1
Construction	7.1% n = 2	5.4% n = 2	0.0% n = 0	0.0% n = 0	0.0% n = 0	4
Engineering	3.6% n = 1	5.4% n = 2	0.0% n = 0	6.7% n = 1	7.1% n = 1	5
Real estate	3.6% n = 1	0.0% n = 0	0.0% n = 0	0.0% n = 0	0.0% n = 0	1
Total	20.9%, n = 28	27.6% n = 37	29.9% n = 40	11.2% n = 15	10.5% n = 14	134

A greater number of the respondents (n = 40, 29.9%), indicated their ERM system were in stage 3, while the minority 14 (10.5%) participants were at stage 5 of implementation. Thirty-seven (27.6%) were in stage 2, 28 (20.1%) were in stage 1, 15 (11.2%) respondents were in stage 4. Table 8 displays organizational stage of ERM deployment.

Results regarding stage of ERM deployment indicate the transport and logistics, education, hospitality and government sectors had no respondents for Stage 1 of ERM deployment. The majority (n = 7, 25.0%) belonged to the business services group. In between were health (n = 1, 3.6%), IT, insurance, and not for profit making up 7.1% (n = 2) each, manufacturing (n = 3, 10.7%), and business services (n = 7, 25.0%). For Stage 2, the insurance, utilities, education, hospitality, defense, legal, real estate, and transport and logistics sectors had no respondents. The energy/oil & gas, and not for profit organizations had one respondent each (2.7%). The construction and engineering sectors consisted of two (5.4%) participants each. The manufacturing, IT, and government sectors had five respondents (13.5%) each. The banking and finance and health sectors had four (10.8%) respondents each. The majority (n = 8, 21.6%) were in the business services sector.

At stage 3 of deployment, where there was a plan in place to implement a holistic risk management system, most of the respondents were in the business services (n = 9, 22.5%). The minority were in energy/oil and gas, utilities, legal, construction, engineering, and real estate industries (n = 0, 0.0%). Health, hospitality, and defense consisted of one participant (2.5%) each. Two participants (5.0%) each were noted to be in transport and communication, government, and banking and finance. The insurance and manufacturing industries comprised three (7.5%) respondents each. The rest are; not for profit and education consisting of five (12.5%) participants each, and the IT industries represented with six (15%) participants.

At stage 4, where all the organizational risks were assessed and managed, the transport and logistics and government sectors had no respondents. The majority however were the insurance, manufacturing, business services, and the IT industries (n = 2, 13.3%). This was followed by energy/oil and gas, health, not for profit, education, defense, banking and finance, and engineering (n = 1, 6.7%) each. The minority in this stage of implementation were transport and logistic, government, utilities, hospitality, legal, construction, and the real estate sectors with no representation each. Stage 5, the highest level of deployment where ERM forms an integral component of the organizational planning and control mechanism, IT, not for profit, education, utilities, hospitality, defense, legal, construction, real estate, and the transport and logistics sectors had no fully developed ERM in place. Most of the respondents (n = 3, 21.4%) were in the insurance industries. This was followed by the Business services, banking and finance, and health which had the same number of respondents (n = 2, 14.3%). Manufacturing, government, education, engineering, and energy/oil & gas sectors were next (n = 1, 7.1%).

4.1. Details of Analysis and Results

The study utilized multinomial logistic regression to explore the relationship between the dependent and independent variables. The dependent variable here was ERM (enterprise risk management), which had five stages; from stage 1 to stage 5. Stage 1 is the lowest level of ERM implementation while stage 5 is the best stage. In this analysis, Audit committee (AC), presence of chief risk officer (CRO) and Top management (TM) support levels were the independent variables. Based on these variables, for each stage of ERM there was one regression and this depicted the relations between the dependent and independent variables in comparisons with the reference category in terms of odds ratio as shown in Table 9. This table presents the multinomial logistic regression model parameter estimation.

With regards to exp.(B) or odds ratio, for TM support, the largest value (1.479) was noted at stage 4 of deployment of ERM, followed by exp. (B) = 1.418 at stage 2, exp. (B) = 1.191 at stage 3 and exp.(B) = 1,130 at stage 5. For CRO, the largest value exp. (B) = 6.592 was at stage 4, followed by exp. (B) = 5.048 at stage 2, exp. (B) = 4.381 at stage 5 and exp. (B) = 1.172 at stage 3. For AC, the highest value exp. (B) = 3.756 was realized at stage 5, and the least exp. (B) = 1.139 at stage 4. Between these were exp. (B) = 2.146 for stage 3 and exp. (B) = 1.728 at stage 2.

In terms of p-values, for TM support, the highest value (p = .503) was at stage 5 and the least (p = .023) at stage 2. Between these were stage 3 (p = .170) and stage 4 (p = .064). For CRO, the highest value (p = .796) was noted at stage 4 followed by (p = .090) at stage 5. At stage 4, p = .033 and at stage 2, p = .016. For AC, the highest (p = .877) was observed at stage 4, followed by stage 2 (p = .418), stage 3 (p = .202), and stage 5 (p = .173).

Concerning the logistic coefficient (B), for TM support, stage 3 was noted with the highest (B = 1.75) followed by stage 4 (B = .391). Stage 2 was next (B = .349) and stage 5 the least (B = .122). For the presence of CRO, stage 4 had the largest value (B = 1.886) and stage 3 realized the least (B = 1.477). In between were stages 2 (B = 1.619) and stage 5 (B = 1.477). For AC, the least was in stage 4 (B = .130) and the highest in stage 5 (B = 1.323). Stage 2 was B = .547 and stage 3, B = .763. Table 10 illustrates the Pseudo Model R-squared.

Table 9. Multinomial logistic regression model parameter estimation

ERM[a]		*B*	Std. Error	Wald	df.	Sig. [*P*-value]	Exp.(*B*) / Odd ratio
Stage 2: Risks are assessed and preventatively managed for certain areas/parts of the organization like security, finance, etc	Intercept	-2.064	.657	9.863	1	.002	
	Management Support level	.349	.153	5.184	1	.023	1.418
	[CRO= Yes]	1.619	.672	5.802	1	.016	5.048
	[CRO= No]	0[b]	.	.	0	.	.
	[Audit committee= Yes]	.547	.675	.657	1	.418	1.728
	[Audit committee = No]	0[b]	.	.	0	.	.
Stage 3: Risks are proactively assessed and managed for certain areas/parts of the organization	Intercept	-.587	.459	1.638	1	.201	
	Management Support level	.175	.128	1.884	1	.170	1.191
	[CRO= Yes]	.159	.614	.067	1	.796	1.172
	[CRO= No]	0[b]	.	.	0	.	.
	[Audit committee= Yes]	.763	.599	1.625	1	.202	2.146
	[Audit committee= No]	0[b]	.	.	0	.	.
Stage 4: We are implementing an ERM	Intercept	-3.033	.957	10.038	1	.002	
	Management Support level	.391	.212	3.421	1	.064	1.479
	[CRO= Yes]	1.886	.883	4.560	1	.033	6.592
	[CRO= No]	0[b]	.	.	0	.	.
	[Audit committee= Yes]	.130	.841	.024	1	.877	1.139
	[Audit committee= No]	0[b]	.	.	0	.	.
Stage 5: Objectives and risks are aligned and an ERM is implemented and is an integral part of our strategic planning & control cycle	Intercept	-2.715	.896	9.192	1	.002	
	Management Support level	.122	.182	.449	1	.503	1.130
	[CRO= Yes]	1.477	.872	2.868	1	.090	4.381
	[CRO= No]	0[b]	.	.	0	.	.
	[Audit committee= Yes]	1.323	.972	1.854	1	.173	3.756
	[Audit committee= No]	0[b]	.	.	0	.	.

a. The reference category is: Stage 1: No attempts to develop an ERM
b. This parameter is set to zero because it is redundant.

Table 10. Model Pseudo R-Square (strength of association)

Model Pseudo *R*-Square	
Nagelkerke's Pseudo R-Squared	.251

From the table above, Nagelkerke *R*-squared was .251(ranges from 0 – 1) and shows that the model can explain 25% of the relationship between dependent and independent variables. Table 11 presents the model fitting information.

Table 11. Model Fitting Information

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	*df*	Sig. [*P*-value]
Intercept Only	174.588			
Final	137.953	36.636	12	.000

The 2 Log likelihood value was 137.953 and Chi-Square 36.636 at a 12-degree freedom. It shows that the model is statistically significant (Chi-square = 36.63, $p < .05$) to establish the relationship between the dependent and independent variables.

Research Question 1

Research Question 1 asked, what is the relationship, if any, between the presence of a Chief Risk Officer and the implementation of ERM?

To address Research Question 1, a regression analysis was used to determine the relationship, if any, between the presence of a CRO and the implementation of ERM. A correlational analysis was also conducted to determine the strength and direction of the relationship. From Table 19, Stage 1 of ERM implementation is the reference category; all other stages are computed in reference to stage 1. For Stage 2 of ERM implementation, there was a significant positive relation between the presence of CRO and ERM ($B = 1.691$, $p < .05$). Compared to No-CRO, the organizations with Yes-CRO had a better ERM implemented for this stage. The odd ratio in this case shows, for one No-CRO organization there would be five organizations with Yes-CRO for stage two compared to stage one (which is the lower stage). All these indicate that, with better ERM there would be more CRO for the organizations, in other words the presence of CRO would better the ERM (stage 2).

Furthermore, for stage three of ERM implementation there was a positive relation between ERM and presence of a CRO, despite the fact that this relation was not statistically significant ($B = 1.59$, $p = .796$). However, for stage four, there was a statistically significant relationship between ERM and CRO ($B = 1.886$, $p < .05$), here the odd ratio shows, for each company with No-CRO there would

be around six companies for Yes-CRO (Odd ratio = 6.5).

Research Question 2

Research Question 2 asked, what is the relationship, if any, between the presence of an Audit Committee and the implementation of enterprise risk management?

To address Research Question 2, a regression analysis was used to determine the relationship, if any, between the presence of an AC and the implementation of ERM. A correlational analysis was also conducted to determine the strength and direction of the relationship. For stage 2, the study found a positive relation between the presence of an AC and ERM deployment. This relation was however not statistically significant (B = .547, p = .418). For stage three of ERM implementation, there was a positive relation between ERM and presence of an AC, although this relation was not statistically significant (B =. 763, p = .202). Similarly, for stage 4, there was a positive relation between ERM and presence of an AC, but this relation was not statistically significant (B =. 130, p = .877). At stage 5 of deployment, a positive relationship was noted between the presence of an AC and ERM although, this was not statistically significant (B = 1.323, p = .173).

Research Question 3

Research Question 3 asked, what is the relationship, if any, between Top Management support and the implementation of enterprise risk management?

To address Research Question 3, a regression analysis was used to determine the relationship, if any, between TM support and the implementation of ERM. A correlational analysis was also conducted to determine the strength and direction of the relationship. Again from Table 19, for stage 2, there is a positive and significant relationship between ERM and Management Support level (B = .349, p <.05). This indicated for stage 2 of ERM, one-unit increase in management level or better management level would have positive impact on ERM by 1.418 times. Thus, higher management support level would increase the higher level of ERM (Stage 2) compared to lower ERM (Stage 1).

In addition, for stage 3 of ERM there was a positive relation between ERM and Management Support level, despite the fact that this relation was not statistically significant (B = .175, p = .170). For stage 4 of ERM implementation, although there was a positive relation between ERM and TM support, this relation was not statistically significant (B =. 391, p = .064). Again for stage 5 of ERM, there was a positive relation which was not statistically significant (B = .122, p = .503).

Furthermore, to make judgment about the relationship between ERM and CRO, ERM and AC, a non-parametric (Spearman's rho) correlation was conducted.

ERM and CRO Correlation Analysis

Table 12 illustrates the correlation between CRO and ERM for the respondents in the survey.

Table 12. Correlation between ERM and CRO

Correlation between ERM and CRO				
			ERM	**CRO**
Spearman's rho	ERM	Correlation Coefficient	1.000	.206*
		Sig. (2-tailed)	.	.017
		N	134	134
	CRO	Correlation Coefficient	.206*	1.000
		Sig. (2-tailed)	.017	.
		N	134	134

**. Correlation is significant at the .05 level (2-tailed).*

As per the correlation value in Table 12 above, there is a positive and weak correlation between CRO and ERM, the correlation is statistically significant at .05. This relationship shows, as CRO increased from No-CRO to Yes-CRO, there would be higher ERM (from lower stage to higher stage). This indicates, as CRO is present in a company, it would have better ERM.

ERM and Audit Committee Correlation Analysis

Table 13 presents the correlation between ERM and Audit committee (AC).

Table 13. Correlation between ERM and Audit committee

Correlation between ERM and Audit committee				
			ERM	**Audit committee**
Spearman's rho	ERM	Correlation Coefficient	1.000	.215*
		Sig. (2-tailed)	.	.013
		N	134	134
	Audit committee	Correlation Coefficient	.215*	1.000
		Sig. (2-tailed)	.013	.
		N	134	134

**. Correlation is significant at the 0.05 level (2-tailed).*

As provided in Table 13, there is a positive and weak correlation between ERM and presence of AC. This correlation is also statistically significant. This shows, if there is an increase in AC, from No - AC to Yes - AC, there would be better ERM (as positive relationship). Thus, with the presence of ACs, organizations have better ERM performance level.

Relationship between CRO and Implementation of an ERM

$H1_0$: There is no significant relationship, if any, between the presence of a CRO and the implementation of an ERM.

$H1_A$: There is a significant relationship between the presence of a CRO and the implementation of an ERM.

Based on the regression and correlation analysis, the null hypothesis has been rejected and the alternative has been accepted. Thus, it is indicative that, there is a significant relationship between the presence of a CRO and the implementation of an ERM. Here, the relationship between presence of a CRO and the implementation of an ERM is positive as shown in Table 22.

Relationship between the Presence of an Audit Committee and the Implementation of an ERM

$H2_0$: There is no significant relationship if any, between the presence of an Audit Committee and the implementation of an ERM.

$H2_A$: There is a significant relationship between the presence of an Audit Committee and the implementation of an ERM.

The regression result and the correlation analysis suggested that there is a significant relationship between the presence of an AC and the implementation of an ERM. Thus the null hypothesis has been rejected here and the alternative has been accepted. The correlation also found a positive relationship between the presence of an Audit Committee and the implementation of an ERM displayed in Table 13.

Relationship between the Support of Top Management and the Implementation of an ERM

$H3_0$: There is no significant relationship, if any, between the support of Top Management and the implementation of an ERM.

$H3_A$: There is a significant relationship between the support of Top Management and the implementation of an ERM.

As per the regression analysis the null hypothesis has been rejected and the alternative has been accepted, which ensures, there is a significant relationship between the support of Top Management and the implementation of an ERM. This relationship is also positive, thus with the increase of management support the implementation of ERM would be more effective.

Relationship among the Independent Variables (CRO, AC and Management Support Level)

Table 14 shows the correlations between the independent variables.

Table 14. Correlations between the independent variables

Correlations between the independent variables					
			Management Support level	CRO	Audit committee
Spearman's rho	Management Support level	Correlation Coefficient	1.000		
	CRO	Correlation Coefficient	.263**	1.000	
	Audit committee	Correlation Coefficient	.308**	.519**	1.000

***. Correlation is significant at the 0.01 level (2-tailed).*

From the table above, it shows there are positive correlations between management support level and CRO (r = .263, p < .01) as well as AC (r = .308, p < .01). These indicate as management support increase so does the presence of CRO and AC and vice versa. Moreover, there is a strong positive correlation between presence of CRO and AC (r = .519, p <.01), this relation shows the presence of CRO would be higher with the presence of an Audit Committee and vice versa.

5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

This section provides a summary and discussion of the study's findings related to the three research questions, implications for researchers and practitioners, limitations of the research, recommendations for further research, and conclusions that can be drawn from the study. The purpose of this study was to examine the impact of Chief Risk Officers (CRO), Audit Committees (AC), and Top Management (TM) as well as the implementation of enterprise risk management (ERM). This study investigated the inadequacy of organizational risk management practices aimed at improving performance and reducing or preventing losses. This problem was particularly important as improved performance creates value for shareholders (Nocco & Stulz, 2006). This study contributed to emerging research on organization-wide risk management implementation and the body of risk management literature. This study examined factors associated with the effective implementation of holistic approaches to risk management as applied to financial institutions, manufacturing, insurance companies, business services, healthcare industries, government, not for profit organizations, information technology (IT), and the oil and gas industries in North America.

The study used a non-experimental, correlational approach to explore the relationship between the presence of a CRO and an AC and the support of TM in relation to the implementation of ERM. A survey instrument was administered to a group of self-identified risk-management professionals who were members of Survey Monkey Audience Service database. The survey instrument was used to obtain data on the level of agreement or disagreement about ERM elements. The use of the non-experimental approach is consistent with previous research (e.g., Arnold et al., 2012; Beasley et al., 2005; Beasley et al., 2007; Gordon et al., 2009; Hoyt & Liebenberg, 2011; McShane et al., 2011; Paape & Speklé, 2012; Pagach & Warr, 2010; Tahir & Razali, 2011; Waweru & Kisaka, 2013).

5.1. Discussion of the Results

The results of the statistical analysis demonstrated that there was a statistically significant relationship between the three independent variables (CRO, AC, and TM support) and the implementation of ERM. Consequently, the three null hypotheses tested in this study were rejected.

Research Question 1

RQ1. What is the relationship, if any, between the presence of a Chief Risk Officer (CRO) and the implementation of ERM?

Based on the regression and correlation analysis for Research Question 1, the null hypothesis has been rejected. Thus, it was indicative that, there was a significant positive relationship between the presence of a CRO and the implementation of ERM.

Research Question 2

RQ2. What is the relationship, if any, between the presence of an Audit Committee and the implementation of ERM?

The regression result and the correlation analysis for Research Question 2 suggested there was a positive and significant relationship between the presence of an AC and the deployment of an ERM system. Thus, the null hypothesis was rejected.

Research Question 3

RQ3. What is the relationship, if any, between Top Management support and the implementation of ERM?

For Research Question 3, the regression analysis led to the rejection of the null hypothesis, as a significant positive relationship was observed between the support of TM and the implementation of an ERM. These are further elaborated in this chapter.

The CRO and ERM Deployment

Researchers studying the influence of the CRO on an integrated system of handling risk have noted that the presence of a risk champion was related to the adoption and implementation of an institutional wide approach of managing risk (Beasley et al., 2005; Daud et al., 2010; Hoyt & Liebenberg, 2008; Kleffner et al., 2003; Liebenberg, 2003; Liebenberg & Hoyt, 2003; Pagach & Warr, 2011; Waweru & Kisaka, 2013). Although the presence and quality of the risk officer strongly correlated with enterprise risk management strategy (Saeidi et al., 2012), Liebenberg and Hoyt (2003) argued that the reverse however, did not suggest the absence of such a system.

Based on the results of the regression and correlational analyses, a significant positive correlation was noted between presence of CRO and ERM at Stage 2 of the implementation process (B = 1.691, P < .05). According to the odd ratio, at Stage 2 of the ERM implementation process, for each organization without a CRO, there were five organizations that had a CRO. This demonstrates that the presence of CRO is linked to ERM deployment (at Stage 2).

At Stage 3 of ERM implementation, there was positive correlation between ERM and CRO, but the relationship was not statistically significant (B = 1.59, p = .796). However, at Stage 4 of ERM implementation, there was a positive and statistically significant relationship between ERM and CRO (B = 1.886, p < .05). This implies that, at Stage 4 of ERM implementation, more companies have a CRO, and thus, their ERM is stronger or well advanced. At Stage 5 of ERM implementation, there was also a positive correlation between ERM and CRO; however, the relationship was not statistically significant (B = 1.477, p = .090).

Based on the correlational analysis (Table 22), there was a weak, positive correlation between CRO and ERM deployment. Correlations were considered statistically significant at .05. This relationship shows, as the presence of CROs increased, organizations demonstrated higher levels of ERM implementation (based on lower and higher stages). This indicated that the presence of a CRO in an organization is linked to an organization having a better ERM system.

Based on these analyses, this study found a positive relationship between the level of ERM deployment and the presence of a CRO. This result was expected, and was consistent with previous research (e.g., Baxter, Bedard, Hoitash, & Yezegel, 2013; Beasley et al., 2005; Kleffner et al., 2003; Liebenberg & Hoyt, 2003; Paape & Speklé, 2012; Pagach & Warr, 2011; Wan Daud et al., 2010; Waweru & Kisaka, 2013). These researchers observed a significant positive relationship between the presence of a senior management role such as a CRO or its equivalent and the effective deployment of organization-wide risk management systems.

The presence, influence, and role of the CRO are important in the promotion and implementation of an ERM system (Beasley et al., 2005; Kleffner et al., 2003; Lam, 1999). The study by Liebenberg and Hoyt (2003) found that the relationship between ERM implementation and appointment of a CRO could be viewed as a strong signal for its use. In addition, Beasley et al. (2005) in investigating the relationship between the presence of a CRO and ERM implementation, found that the presence of a CRO significantly increased the organization's level of ERM implementation.

The AC and ERM Deployment

With the exception of Paape and Speklé (2012) most of the extant literature reviewed during this study did not employ the AC as a variable during the deployment of an ERM systems. This is consistent with the contingency theory which endorses the view that there are no universally valid rules of organizing and management" (Burrell & Morgan, 1979 as noted by Rejc, 2003, p. 246). This does not look at universal principles applicable in all situations, but instead purports to explain how one attribute or characteristic is dependent upon another (Vecchio as cited by Mullins, 2005).

The analyses further revealed that for stage 2, a positive correlation existed between the presence of an AC and ERM deployment. This relation was however not statistically significant (B = .547, p = .418). For stage three of ERM implementation, there was a positive relation between ERM and presence of an AC, although this relation was not statistically significant (B = .763, p = .202). Similarly, for stage 4, there was a positive relation between ERM and presence of an AC, but this relation was not statistically significant (B = .130, p = .877). At stage 5 of deployment, a positive relationship was noted between the presence of an AC and ERM although, this was not statistically significant (B = 1.323, p = .173). The data analysis demonstrated a weak positive correlation between the presence of AC and ERM implementation. This correlation was statistically significant. This implied that organizations with an AC would have better ERM implementation and performance.

The correlation analysis also found a positive relationship between the presence of an AC and an organization's level of ERM implementation. This outcome was expected and consistent with observation made by Paape and Speklé (2012). The present study also found a strong positive correlation between presence of an AC and CRO (r = .519, p < .01). This relationship demonstrated that the presence of an AC would be higher with the presence of CRO and vice versa.

TM Support and ERM Deployment

It was observed that for Stage 2, there was a significant positive relationship between ERM and TM support level (B = .349, p < .05). At Stage 2 of ERM deployment, a one-unit increase in TM support level had a positive impact on ERM by a factor of 1.418. Thus, higher TM support was reflected in an increase in the level of ERM implemented (for example Stage 1 vs. Stage 2). At Stage 3 of ERM implementation, a positive correlation between ERM and TM support was observed; however, this relationship was not statistically significant (B = .175, p = .170). Stage 4 of deployment demonstrated a positive correlation between ERM and TM support even though this relation was not statistically significant (B = .391, p = .064). At Stage 5 of ERM implementation, there was a positive correlation between ERM and TM support despite the fact this relation was not statistically significant (B = .122, p = .503).

The regression analysis also demonstrated a significant positive relationship between TM support and ERM implementation. Therefore, as the support of senior management increases, the quality and effectiveness of ERM implementation increased. The study also found positive correlations between TM support level and the presence of a CRO (r = .263, p < .01) as well as AC (r = .308, p < .01). These outcomes suggest that TM support increased with the presence of a CRO and AC and vice versa. Based on the findings of the data analysis, the support of TM and the presence of a CRO and an AC are related to successful ERM deployment.

Beasley et al. (2005) observed that the existence of a CRO, managerial involvement, and auditor type were associated with more advanced stages of ERM adoption. Lam (1999) noted that the role of TM was critical for the success of an ERM endeavor, as TM defines what acceptable risks are and establishes the needed organizational structures and frameworks for effective performance. In addition, TMs provide vision, goals, and strategy for risk management and models for the desired behaviors (Drew et al., 2006).

In the present study, a majority of the respondents (n = 65, 48.5%) affirmed the absence of an integrated risk management system within their organizations (suggesting risks were assessed and managed reactively or assessed and preventatively managed for certain areas of the organization). A total of 40 respondents (29.9%) indicated their organizations had planned the deployment of an ERM system and that certain risks were proactively assessed and managed. Twenty-nine respondents (21.7%) indicated their organization had fully implemented an organizational wide risk management system (where all strategic, financial, operational, project, and compliance risks were proactively assessed and managed). Nearly half of these respondents (10.5% of the total population, n = 14) noted their organizations were in Stage 5 (the highest level) of the implementation process, while the remainder of the respondents (11.2% of the total study population, n = 15) indicated their organizations were in Stage 4 of the deployment process. At stage 5 of deployment, ERM becomes an integral part of the organization's strategic planning and control cycle. The low percentage of organizations in stage 5 (10.5%, n = 14) suggests that ERM deployment remains immature. This finding is consistent with observations made by previous researchers (e.g., Beasley et al., 2005; Paape & Speklé, 2012; Waweru & Kisaka, 2013).

Studying the ERM and organizational oversight in 2010, Beasley, Branson, and Hancock noted that 28% of respondents indicated their ERM deployment was effective and efficient, while 60% acknowledged their systems were under developed and risk management was unsystematic. Wan Daud, Yazid & Hussain, (2010) in their study involving publicly listed Malaysian firms found that 43% of respondents noted that their organizations had a complete ERM mechanism in place, 38% indicated their ERM was partially developed, 5% were planning to adopt an ERM system, whereas 14% were still considering adoption options. Paape and Speklé (2012) found that only 11% of respondents in their study had fully functional ERM system in place, another 12.5% were in the implementing process, 23.5% were planning to implement an ERM mechanism, 38.9% were also considering the deployment of such a system, and 14% did not have a robust risk management system. Waweru and

Kisaka (2013) found that 27% of respondents had ERM systems in place in their organizations, while 36% had not implemented any ERM. Based on the findings of other researchers in combination with the present study's data analysis, it appears as though organizations have been slow to adopt a holistic approach to risk assessment and management. The low adoption rates could indicate that ERM remains immature a noted earlier (Beasley et al., 2010; Waweru & Kisaka, 2013). Despite the fact that ERM is still in the early stages of development, organizations that have implemented it are assumed to be managing their risks holistically and strategically (Kleffner, Lee, & McGannon, 2007).

5.2. Implication of the Study Results

The results of the study revealed that, there was a significant positive relationship between the presence of a chief risk officer (CRO) and the implementation of enterprise risk management (ERM). The null hypothesis was rejected and the alternative accepted. This implies that organizations wanting to improve the efficiency of their risk management systems need to engage a CRO during implementation. The key benefit of the presence of a risk champion is the ability to expand risk management responsibilities throughout an organization's leadership structure (De La Rosa, 2007). Such an executive works with other managers to set up a risk management system and disseminates risk information throughout the organization (COSO, 2004; Saeidi, Sofian, Rasid, & Saeid, 2012). The CRO can also reduce risk-related information asymmetry between shareholders (Beasley et al., 2008). As they are ultimately responsible for uniting all the risk management activities across the organization, risk officers reduce the duplication of efforts across the various sectors within the organization and increase an organization's efficiency (De La Rosa, 2007).

The regression result and the correlation analysis suggested there was a positive and significant relationship between the presence of an audit committee (AC) and the deployment of an ERM system; leading to the null hypothesis being rejected and the alternative accepted. This suggests that the inclusion of ACs during the implementation of an entity-wide risk management system is critical. ACs play critical roles in the oversight of risk management practices (Livingston, 2005; Paape & Speklé, 2012). The AC is responsible for issues related to the relationship between the organization and its auditors (Taher & Boubaker, 2013). According to the National Commission on Fraudulent Financial Reporting, ACs create a platform where directors, management, and auditors can coordinate issues pertaining to risk management and financial reporting (as cited in Turley & Zaman, 2004). The AC is able to influence the board of directors (BODs) to ensure that risk management processes are allotted attention and resources in order to be successful (Paape & Speklé, 2012). The AC is also instrumental in promoting CG principles to safeguard public interest (Szczepankowski, 2012; Vasile & Croitoru, 2013). Menon and Williams argued that the existence of an AC does not necessarily indicate effectiveness (as cited in Turley & Zaman, 2004).

In addition, it was observed that there are positive correlations between support levels of top management (TM) and the implementation of an ERM. This implies that the inclusion of TM and leadership support is instrumental to the successful deployment of an ERM management system. TM can influence knowledge sharing and learning through the creation of appropriate climate, culture, and resources (Lin, 2007). Lin (2007) further explained that through knowledge donation and collection, an organization is able to enhance its innovation abilities. Effective TM support influences the setting of organizational values and encourages the development of appropriate management styles in order to enhance the performance of an organization (Chen & Paulraj, 2004).

Enterprise-wide risk management is strategic and thus cannot succeed without TM support (Bowling & Rieger, 2005). Andriole (2009) argued that in the absence of TM support, opportunities can be missed and projects can fail. According to Tiller (2012), strong leadership and management support creates success for most strategies, and organizations that satisfy stakeholders and maintain profitability must promote it. Consequently, TM must participate in the early stages of implementing a collaborative risk management system (Bowling & Rieger, 2005).

TM played a critical role in the success of any effective risk management system (Beasley et al., 2008). TM support facilitates the integration of risk management philosophy and strategy across the organization. The nature, scope, and impact of corporate risk management must have strong support from TM in order to be successful (Walker et al., 2002). Employees of an organization are likely to accept and adopt an enterprise wide risk management system when it is noted that TM and BODs are supportive and actively involved in the risk management process (Brown et al., 2009). Hence, for any collaborative risk management framework to succeed, it is critical that the entire organization gets involved.

The research model accounted for 25% of the relationship between dependent and independent variables, indicating there could have been other contingent organizational features or variables of ERM deployment which were not considered in this study, an assertion corroborated by Beasley et al. (2005). However, the model was statistically significant (Chi-square = 36.63, $p < 0.05$) to establish the relationship between the dependent and independent variables.

Consistent with the contingency theory, this study found that the presence and role of a CRO, an AC, and TM support significantly influenced the deployment of an ERM system. The contingency theory endorses the view that there are no universally valid rules of organizing and management" (Burrell & Morgan, 1979 as noted by Rejc, 2003, p. 246). The augment is that there was no single best approach to managing and organizing (Hanisch & Wald, 2012; Burns & Staker, 1961; Lawrence & Lorsch, 1967). Howell et al. (2010) observed that for effectiveness, the various external challenges that an organization is presented with requires the application of different organizational characteristic; and "an optimal fit may require

different organizational characteristics to suit different external conditions" (p.257).

The outcome of this study is useful when assessing factors related to an organization's ERM deployment. Based on the present research findings and evidence in the scholarly literature, when implementing an ERM system, it is important for an organization to engage a CRO, form an AC, and enlist the support of TM. By so doing, organizations can enhance effective risk management and thereby increase shareholder value (Baxter et al. 2013; Beasley et al. 2005; Bowling & Rieger, 2005; Cumming & Hirtle, 2001; Lam, 2001). These measures also allow organizations to deploy systems that can better facilitate a well-coordinated and consistent approach to managing risk, thereby increasing productivity and profitability (Bowling & Rieger, 2005; Kleffner et al., 2003; Nocco & Stulz, 2006). With a consolidated mechanism in place, a comprehensive approach to risk management in alignment with the organization's strategy, can be realized (Liebenberg & Hoyt, 2003; Stroh, 2005).

Previous studies have only examined organizations with ERM or drawn samples exclusively from publicly traded firms. The present study, however, expanded the research sample to include professionals from various sectors of finance, manufacturing, IT and telecommunication, insurance, business services, transport and logistics, government or non-profit, healthcare, and energy/oil and gas industries in North America. In terms of industry type, this study found that organizations in the financial, banking, insurance, and educational sectors had better developed ERM programs in place. This observation was consistent with previous findings of Beasley et al. (2005) and Paape and Speklé (2012). The study also noted that organizations in the manufacturing, healthcare, automotive, government, not for profit, engineering, utilities, energy/oil & gas and utilities also had ERM systems in place.

5.3. Limitations

There were several limitations with this study. The reluctance of firms to disclose information about their risk management strategies makes it difficult to locate organizations implementing enterprise risk management (ERM). As a result, there could be crucial organizational features of ERM deployment that might not have been considered in this study (Beasley et al., 2005). Some of these variables may have impacted the outcome of this study.

Secondly, given that the model was statistically significant to establish the relationship between the variables used in the study (Chi-square = 36.63, $p < .05$), although the results of the detailed statistical analysis indicated the model could explain 25% of the relationship between dependent and independent variables. The remaining 75% could be the contributions of other variables not considered in this study. These could include those mentioned in the literature such as BOD independence, presence of auditors, entity size, and type of industry (Beasley, 2005); compliance issues (Bowling, 2005); organizational leverage, profitability, turnover, internal diversification, and shareholders (Yazid, Razali, & Hussin, 2012); presence of more volatile cash flow, and riskier stock returns (Pagach & Warr, 2011); regulatory environment, internal factors, ownership structure, and organizational and industry-related characteristics (Paape & Speklé, 2012); the diversified nature of the organization, and the returns on stock volatility (Eckles et al., 2014). Such a wide range of potential factors suggest the level of strategic risk management implementation in an organization is affected by several contingent variables.

The levels of ERM implementation in participants' organizations were self-reported, which may not have accurately reflected the reality of the ERM maturity level. Similarly, the effectiveness of organizational risk management systems were self-reported and based on participants' perceived judgment, which could potentially led to the introduction of bias resulting from inaccurate observations. Also, some participants were not directly involved in the ERM deployment, and as a result, they may have lacked first-hand knowledge of the entire process (Beasley et al., 2005).

In addition, the research method may not have been able to account for the complexities related to an organizational risk management implementation process. The study assumed that survey data would be obtained from individuals involved in managing risk and that there would be a sufficient number of participants who were involved in and knowledgeable of enterprise risk management. Unfortunately, 20.9% of the participants (n = 28) worked in organizations that had no such systems in place while 27.6% of participants (n = 37) worked in organizations considering ERM implementation.

5.4. Recommendations for Further Research

The results of this research have implications for practice and future research in the field of risk management. To better understand the factors that influence the deployment of an integrated risk management system, it is suggested that the influence of organizational structure on the effectiveness of risk management be investigated. Similarly, the ability of a holistic risk management system to effectively manage organizational risk should be investigated. In relating risk to organizational structure, it is recommended that further research should assess how organizational hierarchy impacts ERM implementation.

In addition, through the use of contingency theory, further research should investigate whether additional factors such as board independence, firm size, ownership structure, growth rate, regulation, industry type, corporate governance, effective communication, and organization risk culture could impact the effective implementation of organizational wide risk management. Although, this study did not directly explore the role of ERM in value creation, it's suggested that the impact of the various level of deployment and their related contributions towards value creation be explored. Such a study could potentially elucidate if any, and how a collaborative approach to risk management influences stakeholder value creation (Kraus et al., 2012). Finally, an experimental research approach could be used to establish a possible cause and effect relationship between variables.

5.5. Conclusion

This study extends emerging research on enterprise risk management by examining organizational factors (such as the role of a Chief Risk Officer (CRO), the role of an Audit Committee (AC), and Top Management (TM) support) associated with its implementation. The major findings indicated a positive and significant relationship between the deployment of an ERM system and the presence of; a CRO, an AC, and TM support. An indication that the presence and role of a CRO, AC, and TM support influenced the deployment of an enterprise wide risk management system. In addition, the study found that as TM support increased so did the presence of the CRO, and AC and vice versa. Moreover, there was a strong positive correlation between the presence of a CRO and an AC, suggesting that organizations with a CRO were more likely to also have an AC and vice versa.

Although the extant literature presents ERM as an effective risk management mechanism, this study noted a minority of respondents (n = 14, 10.5%) as having a fully developed ERM tool in place. These findings indicate that ERM is still in the developmental stages, which corroborates earlier studies. In addition, the findings suggest organizational risk management requires more advancement (Paape & Speklé, 2012).

The study findings are important for decision makers in organizations implementing strategic risk management, as they suggest that organizations need to engage a CRO, an AC, and enlist the support of TM in the deployment of effective risk management policies and mechanisms. For organizations to harness the potential benefits of implementing ERM, a CRO and an AC should be in place and TM support should be high. This study adds to the body of knowledge by suggesting that the implementation of an ERM system is not only limited to the financial or insurance industries but also extends to various sectors such as; education, business services, government, manufacturing, legal, not for profit, engineering, utilities, energy/oil & gas and healthcare.

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