



The Influence of Chief Risk Officer on the Effectiveness of Enterprise Risk Management: Evidence from Oman

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ABSTRACT

This paper assesses the level of adoption and implementation of enterprise risk management (ERM) in Oman publicly listed companies and explores the influence of chief risk officer (CRO) on ERM effectiveness. The data was collected using a structured questionnaire with a sample of 94 respondents including board of directors (BOD), chief executive officers (CEO), senior and junior management. The questionnaire was administered online using Survey Monkey for respondents to partake. Chi-square test, t-test, and spearman rank correlation were used to validate the study hypotheses. The study found that there is a lack of awareness and knowledge of the procedures of ERM in most of the Omani publicly listed companies, and the level of adoption of ERM is at early stages. Moreover, the study confirmed that the CRO significantly influences and plays a key role in adopting and implementing ERM in the publicly listed companies in Oman. For Oman where there is a high dependency on oil, publicly listed companies are facing huge risk due to oil price volatility.

Keywords: Chief Risk Officer, Enterprise Risk Management, Publicly Listed Companies, Oman

JEL Classifications: G32, M14

1. INTRODUCTION

Risk is associated with every decision of any organization, starting from board level strategic decisions to daily operational ones. Organizations around the world confront many challenges in the context of managing risks as traditional risk management processes are lacking in this modern world. Overall, intense competition, deregulation, power of technology and changing consumer demographics have altered the business situation, thereby aggravating the risks. With more and more complex business processes, uncertainty and scope of risk broadens, leading to doubling of efforts in apprehending and managing risks faced by businesses. If these risks are not being taken care of and are overlooked, then redundancies and inefficiencies might get created which can even lead to increase in costs and time (Kousky and Kunreuther, 2018).

The past decades have witnessed an improvement in the understanding of risk management practices and have progressed

much. The impact of global financial crisis has focused on the importance of risk management. It has been observed that stakeholders have become more engaged and seek for more transparency and accountability in terms of managing risks (Paape and Speklé, 2012). Moreover, Kousky and Kunreuther (2018) contended that as a response to the increasing expectation of the stakeholders, companies have changed the risk management approach, particularly, after the impact of global financial crisis of 2008. Thus, this changing landscape coupled with increasing dynamics have warranted a change in the risk management approaches. Instead of looking at the risks from a silo-based perspective, business organizations now realized that it is better to look at the risks more holistically.

The new approach of risk management, known as enterprise risk management (ERM) has increasingly become popular. As demonstrated by Acharyya and Brady (2014), ERM is an integrated and rigorous approach where companies address and assess almost

all types of risks within business organization. The benefits of this process include creating a more risk-focused culture in the organization. Moreover, as ERM supports better reporting, structure and analysis of risks, thus improving focus of the higher authorities so that better risk mitigation decisions are adopted. Apart from improving focus and perspectives regards to risk, this process also enables efficient use of resources, by maintaining an effective coordination of regulatory and compliance. The information generated from ERM saves time and costs of audits and reviews. ERM not only addresses hazard risk, but also mitigates financial, operational and strategic risks (Acharyya and Brady, 2014).

However, McShane et al. (2011) observed that despite its popularity, little is known about its effectiveness. Dornberger et al. (2014) revealed that there are five main causes of mistakes when implementing ERM, which are: Inappropriateness of the system itself, human errors, environment complexity, challenges of identifying risks and finally setting up the metrics. In addition, Kleffner et al. (2003) revealed that the challenges associated with implementing holistic risk management systems, in general, include unsuitable organizational structures, resistance to change, poor understanding of how to incorporate new risk management frameworks, and difficulty measuring risk. Also, competing priorities, inadequate resources, an absence of top management support result in low desire to implement it within organizations (Beasley et al., 2009).

In Oman, the publicly listed companies in Muscat securities market (MSM) are obliged to comply with Code of Corporate Governance for Publicly Held Joint Stock Companies. According to Patel (2016) the boards and board committees of publicly listed companies, along with other requirements set by the code, need to implement a risk management plan.

Despite the growing importance of ERM, there is still lack of evidence showing the level of adoption of the ERM in Oman and its effectiveness, particularly in the publicly listed companies. Several studies have been conducted about risk management practices in Oman. For example, Muralidhar (2010) conducted case studies in six organizations in the Gulf Cooperation Council countries and emphasized the need for a proactive ERM program, and a need for more research especially in terms of its implementation (Muralidhar, 2010). An exploratory study of ERM perception in Oman by Shivashankarappa et al. (2011) revealed that the public and private organizations have realized the need for effective risk management strategy after the cyclone “GONU” which hit the shores of Oman in the year 2007, causing a total of four billion US Dollar losses to many organizations. Other researchers including Yafai et al. (2014) found that there is a lack of knowledge and awareness of risk management assessment procedures in the construction industry in Oman.

In view of the above, this paper attempts to fill that research gap assessing the level of adoption and implementation of ERM in Omani publicly listed companies and establishing if the influence of chief risk officer (CRO) can be considered as a major factor in ERM effectiveness in publicly listed companies of Oman.

The remaining of the paper is structured as follows: Section 2 presents the literature review and hypothesis development, section 3 provides the methodology, section 4 presents the results and discussion, and finally section 5 concludes.

2. LITERATURE REVIEW

2.1. ERM

ERM merged in the late 1990s through which a firm identifies and measures all the risk events involved within the organization, as compared to the silo approach (Deltuvaitė, 2012). The “silo” approach mainly focuses on individual risks that exist within the organization. According to this method, every single section needs to manage their own risks. Traditional methods view risks as a series of unrelated elements where it can be classified and coordinated separately. A holistic approach assists in managing risks and can strengthen an organization to deal with the risky issues and opportunities more effectively, thereby enhancing its capability to create and preserve value of stakeholders.

In view of the above, the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004) defined the ERM as: *“... a process affected by an entity’s board of directors, management and other personnel, applied in a strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity goal.”*

ERM is an ongoing process, which gets applied in setting strategy and is designed to identify the potential activities that can affect the profitability rate of the company. It manages and provides reasonable assurance with regards to accomplishing the targeted objectives. Along with other risks, this process incorporates financial, operational as well as strategic risks (Abkowitz and Camp, 2017). This process institutionalizes the procedures of risk management by standardizing tools, methods and identifies the needed strategies that would monitor the individual project risks. Abkowitz and Camp (2017) further stated that ERM assists in addressing the reasons for project failures and accordingly implement measures so that such failures do not occur again. Thus, with the help of robust ERM process, any organization or business enterprise can identify and analyze risks, thereby deciding the event that would be worth taking (Soliman and Adam, 2017). ERM regulations are much more advanced and matured in developed countries as compared to the less developed nations. In the United States, the framework of ERM has been published by COSO and anticipated to become a world level model for the best practice in ERM. COSO can also be called as a coalition of the finance trade associations and the main accounting in the US. The sponsors of this committee include the Institute of Internal Auditors, the Institute of Management Accountants, the American Institute of Certified Public Accountants, the Financial Executives International and the American Accounting Association. ERM is also directed by ISO 31000 principles which is usually claimed to be the first standard in the context of risk management accepted all around the world. In case of the Asia Pacific region, ERM was first formalized as a structure in 1995 by the Australian Standard

of Risk Management and afterward, it became New Zealand Standard for Risk Management in 2004 and served as a guide to ERM practices.

The Code of Corporate Governance for Publicly Listed Companies (New Corporate Governance Code or New Code) issued by Oman's Capital Market Authority (CMA) came into force in Oman. The CMA's Code can be defined as a binding model framework for the regulation and management of all publicly listed companies of Oman and promote accountability, transparency, responsibility and fairness (Capital Market Authority, 2015). The New Code (issued by CMA Circular E/4/2015) replaced the "Code of Corporate Governance for MSM Listed Companies" (the previous code) issued in 2002.

2.2. Effectiveness of ERM

ERM is widely used by financial institutions. The risk management techniques are mainly implemented in establishing corporate governance and in organizational management blueprints. The firms are generally expected to adjust their structure so that risks associated with the foreign exchange rates can be avoided. This enforces steady corporate governance in the organization (Woods, 2009). There are three prominent factors which have impact on the business processes of all the organizations operating across the world. Among these factors one of them is the rising price of oil mainly due to scarcity of supply. The fluctuation in the price of oil has created huge impact on global economy. These factors proclaim the importance of ERM for every organization. Thus, it will consider the global factors along with organizational level factors and will give best possible resolution based on the entire business performance. According to Collier (2018) ERM refers to formulating techniques for managing risk at the corporate level in a holistic way.

The COSO framework is considered as the most widely used model in ERM. In the oil and gas sector, ERM includes three components namely standardization, integration and centralization (Muralidhar, 2010). Standardization is mainly concerned with the nature of competition in the industry, policy governing the functioning of the companies in an industry. Integration refers to the holistic approach of the risk management. It is evident that risks appear in all the functional departments of the organization and all these factors are interrelated. While formulating risk management techniques all the factors should be considered to provide an effective solution. Centralization refers to the enforcement of decision in an organization through one central control unit. This shows that the implementation of ERM in the oil and gas sector incorporates the external factors, internal factors, corporate governance and at the same time providing solution based on the entire business scenario.

According to Dirk (2014) ERM techniques have helped the organizations to handle crisis while lending credits and critically manage the economic recession. It takes into consideration all the internal factors of an organization including the strengths, capabilities of the organization. Thus, it helps to plan the financial matters based on the market condition. At the same time, it determines the availability of new opportunities for the

organization. Even the policies and procedures are constantly evaluated and feedback from the employees is incorporated (Thornton et al., 2010). All these factors have a direct influence on the organizational performance. ERM mitigates the overall risk for an organization thereby improving the organizational performance (Grafton et al., 2010). According to Bromiley et al. (2015) a modern version of ERM includes all the possible risks that might occur for an organization, adherence of the risk management to corporate governance as well as strategy. It can be inferred that much more efficient risk management techniques can be designed if time and prolonged research is done to improve on the existing systems.

2.3. Influence of CRO and ERM

As per the viewpoint of Daud et al. (2010), the ERM is mainly associated with the approach of risk management and risks are a deal based on the ERM concept. Further, the ERM is an integrated approach for handling risks and need to shift the focus in a strategic manner. It is essential to analyze the appropriate level of influence of CRO on the ERM practices with its appropriate aspects. It is also argued that Omani Public companies adopting ERM strategy that is responsible for the coordination of the ERM program. The role of CRO is considered as working with the managers in order to establish the effective activities of risk management. Further, the position of CRO needs a person with appropriate qualities for bringing changes in the situation.

Bromiley et al. (2015) stressed that the good qualities of successful CRO help to make changes in the effect of working and appropriate management of activities of ERM. The CRO is mainly one of the most important members of the team of management and brings positive changes in the environment of ERM. The issues of information technology are very challenging for people who handle risks and increase the level of responsibilities. The team of CRO also involves the strong aspect of teamwork as well as communication for enhancement in the ERM within Omani Publicly listed Companies. The main quality of successful CRO helps in the development of the knowledge aspect of a process with risk management. Further, Blawert et al. (2007) explains that there is an ability in CRO to consider in-depth study regarding the activity to communicate with the different stakeholders as well as regulators for effective performance. The CRO role implies the leadership in which the people are responsible for the insinuation of ERM strategy and policies, and development of culture of risk that is assisted by the senior level of management.

According to Arena et al. (2010), the ERM needs to be integrated and centralized risk management with appropriate reporting to the senior level of managers. CRO develops an integrated team, which affects the Omani publicly listed Companies in a positive manner and helps to reach a high level with changes in procedure. Further, the CRO performs in a positive manner to changes the perception of people regarding the activities of risk management. It is essential for the team members to understand the situation and bring the changes within a business. Along with this, a better risk reporting can be achieved by the reporting of risk content for managing the transparency. The team of risk management helps to complete the tasks between the interdependencies in order to

lead the organization in an effective manner. There are also some of the side effects of the different perception of team members on the CRO and they need to review the activities, which are to be performed in the ERM. Moreover, the CRO in a company like Oman Oil Company affects the environment in a positive manner and develops the situation of activities of handling issues. In many companies of Oman, the risk aspect for supporting the implementing the ERM activities was inappropriate. The CRO affects the situation and develops many ways in order to perform the quality performance with considering the responsibilities. They are responsible for bringing changes in the system and positively affect the activities of ERM in the system. There are different activities to be performed in the context of CRO and all of the people believe to be positive for the development in the system. However, Pagach and Warr (2007) explained that the Omani Public companies like Oman Arab Bank have their own CRO for handling the big risk management activities at various levels. An adoption of systematic activities needs to be performed in a specific manner for the development of risk management of the business. In addition to that, Ballou and Heitger (2005) stated that CRO plays an important role in the growth of ERM activities to manage the system of risk activities. They try to handle the risk inappropriate manner with suitable processing for solving the issues in an integrated manner. Further, the CRO of Omani Public Companies brings many changes in the tough situation that proves to be effective for the growth of the business. They also offer supportive behavior within the activities of business.

2.4. Theoretical Framework

This study mainly examines the predictors related to the effectiveness of ERM and need to apply the contingency theory for enhancing the power. Further, the theory of empowerment explores the huge interaction between the human factors and organization with an appropriate effectiveness of handling risks. The contingency theory of management suggests that there is not any system for controlling the management of a business. It is essential to have appropriate choice related to the effective system in which the management can face challenges in the difficult environment of business. This study attempts to identify the factors influencing the effectiveness of ERM in Omani Publicly Listed companies. However, the contingent nature of the ERM is mainly acknowledged with the activities performed in the system of ERM. This framework suggests the company to use the system, which helps to give shaping the environment within the environment of operating the business. In addition to this, the framework of COSO states the organization, which does not have the same system of controlling internal activities, as the companies are identical. The statement in the framework mainly implies the requirement of specific strategies of ERM and varies in many areas. It is essential to bring changes in the framework of ERM and provide all information about the issues and problems which affected the success ERM within the organization.

In order to apply contingency theory, this study mainly advances the perceived effectiveness of ERM to manage the risks, which is considered as an outcome of the contingent variables. The consistent nature of the organization helps to manage the risk level of enterprises with the adequacy of the system. The present

study obtains the theoretical aspect which needs to be applied for the argument and considering the appropriate interaction between ERM champion and involvement of employees for positive influence for handling the risks of a business. Further, the analysis mainly reveals the application of theory for effectiveness, which is not uncommon for defining the strategies. The theoretical foundation lies in different fields of the business, economic effectiveness and the managerial aspects of the business. It is also suggested that the effective procedure of budget is contingent on the various characteristics of the organization, environmental circumstances, and the technical adequacy for controlling the system of business. It is essential to provide all the information regarding the ERM procedure and need to consider the changes with proper forecasting. In addition to this, the literature on the aspect of different forms of ERM, which helps the Omani Publicly listed company to develop their area of business in a proper way. The contingency framework can be traced in the study on the units of business with effectiveness in studies. According to Brustbauer (2016), there is a use of landscape approach for testing the hypothesis of contingency regarding the strategies of business, management accounting systems and the effectiveness of business units. Thus, the empirical evidence from the research mainly finds a positive relationship between the independent contributions for the variable in the system of business.

In the frequency of researched contingency of variables in the different sizes and mainly defined as the team members. Another factor is external contingency is the environment and need to achieve the technical environment of the business. However, this factor is used as an immediate surrounding of the organization within the functions of a business. It is also defined as the stable or dynamic activities in the approach of ERM. The modern contingency theorists mainly introduce the different variables of like distributors and suppliers along with the consumer interest groups. Moreover, Gatzert and Martin (2015) proposes the factors of contingency that affects the different strategies of ERM. After this, the study helps to identify the link between the characteristics of contingency and the structure of internal control, which provides favorable outcomes. The firms in Oman also adopt the structure of internal control and help to deal with the uncertainty in an environment for achieving the effectiveness in ERM. This uncertainty high affected the effectiveness of Omani publicly listed companies and need to explore positive results for the survival of a business.

In the early time, there are certain proponents of the application of contingency theory and need to explain the structure of an organization or the management control. Further, it is essential to understand the contextual factors of business, like technology, structure and the environment for managing the system of ERM. The contingency theory mainly considered as the direct connection, which distinguishes it from the traditionalist through emphasizing the contingent variables. It helps to make enhancement in the level of performance and provide a positive environment for an increase in the level of capacity of team members. However, this approach mainly asserts not any kind of strategy and configuration of an organization that directly affects the performance of the business. This approach mainly suggests the significant determinant of

performance and that is considered as an interaction between the contextual variables and the selected strategies.

There are different kinds of contingency interaction among the variables, as shown by Mikes and Kaplan (2014). Based on the variables, the congruence approach mainly ignores the performance of an organization and its equation, but the contingency approach mainly assumes the difference in interaction and identifies the influence on the activities of a business. The aspect of contingency theory mainly considers the alternative types of selection, system approach as well as the interaction among the people for finding out a solution through ERM. The contingency-based study provides a long-lasting domain for research and creates a hierarchical structure of several types of strategy based on the different strategies. However, the current study takes the form of a contingency of moderation and mediation. The type of contingency mainly assumes the positive association between the internal human factors and organizational elements for the effectiveness of ERM in order to manage the level of risks. The mediating role of the CRO helps to manage the activities of ERM. The internal factors of business affecting the situation of implementing ERM practices in a proper way need to consider huge changes in risk management activities. There is a different set of leadership behavior, identified on the activities of consideration and initiating structure. The organization is mainly open about the system followed by the risk managers and need to be careful about the satisfaction and internal needs for adopting the changing environment of business. The internal and external factors of business are required to consider for offering a healthy and positive environment to the team members.

The major focus of this contingency theory contains the style of leadership and the favorable situation of the business. It is essential for the management to create a positive environment based on the activities performed by the risk-handling managers in the firm. This is considered as the empirical aspect of the study and affected the business due to the competitive environment of the business. The responsibilities of ERM are also divided into some group of people for changing the arrangements and help to take decision inefficient manner. There are many challenges faced by the risk managers in order to provide a positive environment and

implementing the ERM within Omani publicly listed companies. However, it can be concluded that it is essential to implement certain approaches in the research for handling the activities of business inappropriate manner. The management and organization mainly accepted the challenges for the demanding situation in the implementation of ERM. According to the changes in the policy of business, it requires to make changes in the level of strategies and policies for the success of the business. Thus, the theories are helpful in identifying the actual reactions of risk managers and provide opportunities to deal with the issues. However, the risk office also influences the organization in order to promote the adoption as well as the implementation of ERM. It also helps to make improvement in the performance of the business and affect the development in society. The performance indicators of organizations help in determining the actual measurement of financial as well as non-financial activities of the business. Thus, the success of the management system is mainly related to the ethical values and integrity for analyzing the ERM approaches in a proper way. The strong strategies of leadership play a crucial role in enhancing the level of motivation and confidence among the team members, as they can positively implement the ERM.

2.5. Conceptual Framework

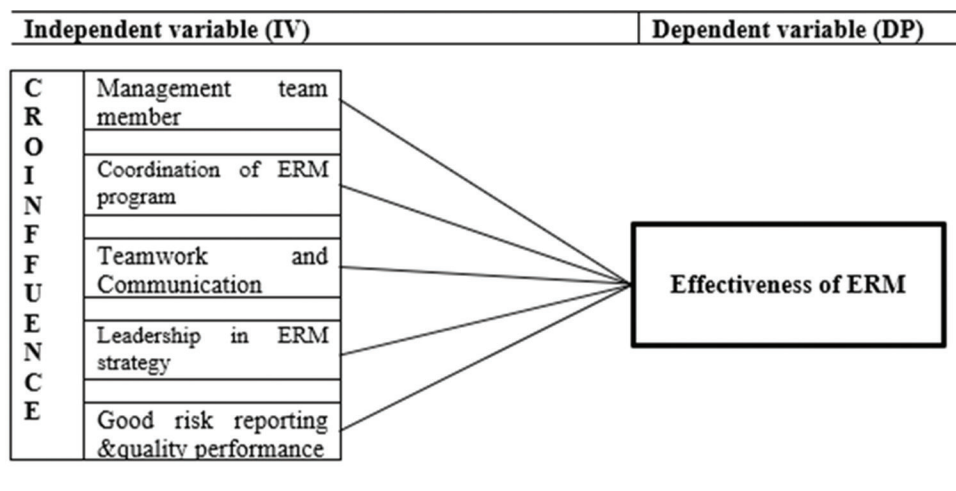
Figure 1 provides the conceptual framework for the link between the independent variable (IV) of this study which is the influence of the CRO and the level of adoption and effectiveness of the ERM, which is the dependent variable (DV).

The influence of CRO in the adoption and effective implementation of the ERM can be through many ways: CRO represents a very important member in the management team in the organization; contributes in the coordination of ERM strategy, helps in teamwork and communication within stakeholders, plays a leading role in ERM strategy and produces good risk report and quality performance.

2.6. Hypotheses Development

The first main objective of this paper is to answer the question on what the level of ERM adoption and implementation in publicly listed companies in Oman is. In addition, the study attempts to examine the influence of CRO on the ERM effectiveness on the

Figure 1: Chief risk officer and enterprise risk management effectiveness framework



companies concerned. Based on the above literature and the objectives, the paper tries to validate the following hypotheses:

- H₁: There is a relationship between adoption and implementation of ERM and the effectiveness of managing risks in the publicly listed companies' in Oman.
 H₂: The CRO plays a positive role on the effectiveness of ERM in the publicly listed companies' in Oman.

3. METHODOLOGY

The study adopted a quantitative approach to assess the level of adoption and implementation of ERM in Oman publicly listed companies and to establish a relationship between the role of the CRO and ERM effectiveness.

The data for the study was collected through structured questionnaire. Most of the literature found on ERM is conducted empirically, through survey questionnaires (Yazid et al., 2011; Gates et al., 2012). The questionnaire was adapted from the ISO 31000: 2009 framework of the principles of an effective risk management. The questionnaire has subject to validity and radiality tests on a pilot sample of 15 respondents and showed a high internal consistency of 79.8% based on Cronbach alpha. The variables reflecting the level of adoption of ERM and the role of CRO were measured using a 5-likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire was administered online using Survey Monkey for respondents to partake.

The sampling frame was based on a stratified random sampling to give a better representation of the publicly listed companies in Oman. The questionnaire targeted 122 companies representing three different sectors namely, financial (30%), industrial (37%) and services (33%). The questionnaire was addressed to the company's board of directors (BOD), chief executive officers (CEO), senior management, middle management, junior management and non-management. Although the target sample size was 122, only 94 questionnaires were received finally, giving a response rate of 77%, which is reasonable to give a valid generalization in the case of Oman.

The data was analyzed using SPSS, version 24. The analysis included descriptive analysis incorporating mean, standard deviation, frequencies and crosstabs. To validate the hypotheses of the study, Chi-square, t-test and correlation were used. Chi-square

was used to test the extent of the adoption and implantation of the ERM, whereas a one-sample test was used to rank the influence of the CRO on the ERM effectiveness. The Pearson rank correlation was employed to measure the correlation between the CRO and the effectiveness of the ERM in the publicly listed companies in Oman.

4. RESULTS

Table 1 shows the extent of adoption and implantation of ERM in the publicly listed companies in Oman. Out of the 94 respondents surveyed, 62.8% affirmed that they identify, assess and control strategic, financial, operational, and compliance risks, with a complete adoption of ERM. This rate of adoption, however, seems to be low given the risky business environment in Oman due to oil prices volatility and the fact that the public companies listed in the MSM in Oman are obliged to comply with the Code of Corporate Governance for Publicly Held Joint Stock Companies and implement a risk management plan (Patel, 2016).

Moreover, as can be observed from Table 1, about 17% of the respondents admitted that they are in the process of implementing a complete ERM, while 9.6% admitted that they identify, assess and control risk in specific area and are planning to implement a complete ERM. About 4.2% admitted that they are actively control risk in specific areas (e.g., health and safety, financial risk) and are considering implementing a complete ERM, while 6.4% have no plans to implement ERM. The Chi-square test shows that these results are significant at 5% ($P < 0.05$).

Table 2 shows the average views of the respondents about the effectiveness of ERM in Omani publicly listed companies. The mean value of 4.184 has been tested against a benchmark of 3.00 (this represents the neutral level in Likert scale), using one-sample t-test. The result indicated that the difference is statistically significant at 5% ($P < 0.05$). This validates the first hypotheses in the study that there is a relationship between adoption and implementation of ERM and the effectiveness of managing risks in the publicly listed companies' in Oman. This is the same as the proposition that has been advocated by Gates et al. (2012) who revealed that the new proposals by the managers in the companies encourage the senior managers to implement the ERM activities and help to make better decisions. Supporting in the same vein, Desender (2011) confirmed that the framework of ERM helps in changing the culture of the companies and creates awareness among employees regarding future risks. The changes in the culture of

Table 1: Extent of ERM adoption and implementation in Omani publicly listed companies

Statement	Frequency	Percent	Chi-square	P-value
We identify, assess, and control strategic, financial, operational, and compliance risks; ERM is an integral part of the (strategic) planning and control cycle	59	62.8	111.85	0.000
We identify, assess, and control strategic, financial, operational, and compliance risks; we are in the process of implementing a complete ERM	16	17.0		
We identify, assess and control risk in specific area; We are planning to implement a complete ERM	9	9.6		
We actively control risk in specific areas (e.g., health and safety, financial risk); We are considering implementing a complete ERM	4	4.2		
Risk management is mainly incident-driven; No plans exist to implement ERM	6	6.4		
Total	94	100		

Source: Author's own calculation

Omani publicly listed companies thus suggest an open discussion on the activities to be performed for the success of a business.

Table 3 shows that there is a high agreement among the respondents with an average of 4.14 and standard deviation of 1.01 that the CRO/ERM Champion is a member of the management team. Further there is a high agreement with an average of 4.48 and standard deviation of 0.83 that the CRO/ERM Champion reports directly to the Board of Directors or the Risk Committee or the Audit Committee. As per the viewpoint of Arena et al. (2010) the ERM needs to be integrated and centralized risk management with appropriate reporting to the senior level of managers.

The respondents highly agreed with an average of 3.86 and standard deviation of 1.08 that the CRO/ERM Champion usually participates in the strategic decision-making at the board level. Ballou and Heitger (2005) stated that CRO plays an important role in the growth of ERM activities to manage the system of risk activities through this participation.

For the rest of the statements, there is a high agreement with respect to the fact that the CRO/ERM Champion is obliged to ensure that

employees are properly trained about risk management with an average of 4.17; The CRO/ERM Champion develop a standardized risk information model to the firm with an average of 4.03; and that the CRO/ERM Champion maintains a cost-benefit focus on ERM with an average of 3.90.

On the other hand, respondents demonstrated a very high agreement with statements related to the fact that The CRO/ERM Champion regularly meets with the senior executives to reinforce Risk Management in their daily activities; the CRO/ERM Champion works with unit leaders to ensure the most significant risk compliance with the organization’s standards; the CRO/ERM Champion work with unit leaders to ensure that risk identification is included in the business plans; and the CRO/ERM Champion develops integrated procedures to report major risks to the board member. In all these statements the average is at least 4.20. The t-test revealed that the results are statistically significant, indicating that there is a high and very high agreement of the respondents about the role of the CRO. Figure 2 shows the role of CRO/ERM champion in adoption and implantation sorted by the average of agreement of the respondents.

Table 2: The average views of the effectiveness of ERM in Omani publicly listed companies

Variable	n	Mean	Std. Deviation	Tested value	t	P-value
Effective risk management	94	4.184	0.687	3.000	59.083	0.000

Source: Author’s own calculation

Table 4 below shows that spearman correlation coefficient between influence of the CRO and the principles of effective risk management is 46.5% which is significant ($P < 0.05$) indicating a positive correlation. Also, there is a positive correlation between the CRO and the ability of the organization to achieve the objectives set for ERM. The correlation coefficient is among to 39.7% and it is statistically significant ($P < 0.05$).

Table 3: Influence of chief risk officer on ERM adoption and implementation

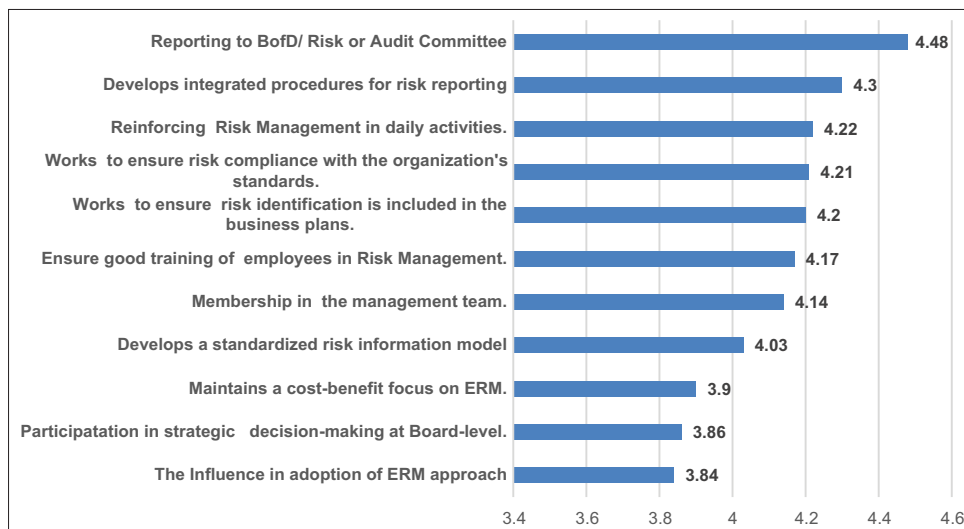
No.	Item	Mean	Std. Deviation	t-value	Decision
1.	The CRO/ERM champion is a member of the management team	4.14	1.01	10.94	High
2.	The CRO/ERM champion reports directly to the Board of Directors or the Risk Committee or the Audit Committee	4.48	0.83	17.29	Very high
3.	The CRO/ERM champion usually participate in the strategic decision-making at board-level	3.86	1.08	7.72	High
4.	The Influence of the CRO/ERM champion is the main driver behind the consideration for the adoption of an ERM approach in my organization	3.84	0.83	9.81	High
5.	The CRO/ERM champion is obliged to ensure that employees are properly trained about risk management	4.17	0.81	14.00	High
6.	The CRO/ERM champion regularly meet with the senior executives to reinforce risk management in their daily activities	4.22	0.79	14.97	Very high
7.	The CRO/ERM champion works with unit leaders to ensure the most significant risk compliance with the organization’s standards	4.21	0.76	15.44	Very high
8.	The CRO/ERM champion work with unit leaders to ensure that risk identification is included in the business plans	4.20	0.82	14.19	Very high
9.	The CRO/ERM champion develop a standardized risk information model to the firm	4.03	0.77	12.97	High
10.	The CRO/ERM champion maintain a cost-benefit focus on ERM	3.90	0.89	9.80	High
11.	The CRO/ERM champion develop integrated procedures to report major risks to the board member	4.30	0.77	16.37	Very high

Source: Author’s own calculation

Table 4: Correlations analysis of the influence of CRO

No. Item	Correlation	P-value	Decision
Principles of effective risk management	0.465	0.02	Positive correlation
Organization ability to achieve the objectives set for ERM	0.397	0.01	Positive correlation

Source: Author’s own calculation

Figure 2: The role of the CRO/ERM Champion in ERM adoption and implementation

Hence, the second hypothesis in this paper which states that there is a relationship between influence of CRO and the effectiveness of ERM in the publicly listed companies in Oman, has been validated and accepted. This result is consistent with Daud et al. (2010) who attribute the success to the role of the CRO in the overall coordination of the ERM program in the organization. Bromiley et al. (2015) attribute the success to the good qualities of successful CRO that help bring changes in the effect of working and appropriate management of activities of ERM. Blawert et al. (2007) explains the growing role of CRO in the leadership and its dynamic role in the management team to implement the ERM strategy. Arena et al. (2010), further affirmed that the CRO affects the situation and develops many ways in order to perform the quality performance, considering the responsibilities. The CRO is responsible for bringing changes in the system and positively affect the activities of ERM in the organization. In addition to that, Ballou and Heitger (2005) stated that CRO plays an important role in the growth of ERM activities to manage the system of risk activities in an integrated manner.

5. CONCLUSION

This study investigates the ERM adoption and implementation in Omani publicly listed companies and the influence of CRO with the effectiveness in managing risks. The study confirms that some of the major companies in Oman had already adopted the ERM framework. However, the stage of adoption can still be considered as the early stage. Additionally, it has been asserted that there is still lack of awareness and knowledge regarding the procedures of ERM. The lack of knowledge and awareness of ERM reveals that there is an ineffectiveness issue of ERM in the publicly listed companies in Oman.

This study confirmed that the CRO significantly influence and plays a key role in implementing ERM in the publicly listed companies of Oman. This study also reveals that there is a positive relationship between the influence of CRO and the effectiveness of ERM in the publicly listed companies in Oman. 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 adoption and implementation of ERM system, it is suggested that the influence of organizational structure on the effectiveness of risk management be investigated. In relating risk to organizational structure, it is recommended that further research should assess how organizational hierarchy, enterprise systems, ownership structure, employee Involvement, growth rate, industry type, corporate governance, effective communication, and firm's financial leverage, impact effectiveness of 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.

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