

## **Enterprise risk management in healthcare organizations**

إدارة المخاطر المؤسسية في مؤسسات الرعاية الصحية

by

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of the requirements for the degree of  
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## Abstract

**Background & Purpose** – Risk management is changing dramatically as organizations move away from old, siloed approaches and toward an enterprise-wide strategy. Organizational Risk Management (ERM) emerged as a new approach for managing organizational risks, concentrating on mechanisms to increase corporate governance and risk management in a holistic manner across many enterprise domains. The aim of this research is to explore the different factors that contribute to the success of ERM in healthcare organizations. For doing this the author examines global scenarios of implementation of ERM in healthcare organizations as well as its further insights during Covid-19. Main findings from the literature indicating that there is a fundamental gap on the implementation of ERM in the UAE healthcare sector.

**Design/methodology/approach**– The study examines the organizational factors that led to effective ERM. A quantitative methodology using survey questionnaire was conducted online for 100 employees in Tashafi al-Futtaim clinics. To give a better representation of Tashafi healthcare group, the sampling frame was based on random sampling of board of directors, senior and Junior Management. The respondents were asked questions about the organizational factors that contributed to the implementation of effective ERM in the organization including the governance and culture in their organization; Strategy development plans; ongoing Risk assessment; Information and communication; Roles and responsibilities of risk management team and Monitoring and control within the organization.

**Findings** – Based on gathered data using SPSS, the study is statistically significant, additionally the six organizational factors in the study have positive correlation to implementation of effective

ERM. However, different levels of agreement of each independent variable to dependent variable indicate different levels of contribution of each organizational factor on effective implementation of ERM. Findings present that the study organization has high agreement and correlation on contribution of governance and culture, and Monitoring and control to the effective implementation of ERM. While strategy development, risk assessment, Roles and responsibilities, and information and communication had mixed agreement to effective implementation to ERM.

**Research limitations/implications** – The survey was conducted on Tashafi AL Futtaim clinics management employees through online link on google forms this presented a limitation of diverse sample of employees conducting the survey. Furthermore, the study is limited to a single healthcare institution, limiting the impact of organizational factors on effective ERM implementation.

**Practical Implications-**. Despite these advancements, little research has been done on the elements that contribute to effective ERM adoption. The demand for ERM adoption has prompted organizations in a variety of industries, including healthcare, to adopt it as it is necessary to address risk management in healthcare to be within context of patient safety.

**Originality/value** – Although large number of articles and studies have explored enterprise risk management (ERM), there are little data about effective ERM implementation in healthcare organizations in the Middle East specifically in Dubai.

**Keywords:** Risk management, Enterprise risk management, healthcare organization, organizational factors, governance and culture, strategy development, risk assessment, monitoring and control, roles and responsibilities, information, and communication

## نبذة مختصرة

**تمهيد عن البحث والغاية منه:** تشهد إدارة المخاطر تغييرات جذرية في ظل تحوُّل المؤسسات من الأساليب التقليدية التي تركز النظرية الانعزالية لأقسام المؤسسة، إلى تبني استراتيجية شاملة للمؤسسة بأكملها. وقد برزت إدارة المخاطر المؤسسية (ERM) كنهج جديد لإدارة المخاطر التي تواجهها المؤسسات، بحيث تركز على الآليات اللازمة لتعزيز الحوكمة المؤسسية وإدارة المخاطر، باتباع أسلوب شامل يغطي مختلف المجالات المؤسسية. ويكمن الغرض من هذا البحث في استكشاف مختلف العوامل التي تُسهم في نجاح إدارة المخاطر المؤسسية ضمن مؤسسات الرعاية الصحية. وللقيام بذلك، يدرس الباحث السيناريوهات العالمية لتطبيق إدارة المخاطر المؤسسية في مؤسسات الرعاية الصحية، علاوةً على التصورات الأخرى التي برزت خلال جائحة كوفيد 19. وتفيد أبرز النتائج الصادرة عن الأبحاث المنشورة بوجود فجوة أساسية في تطبيق إدارة المخاطر المؤسسية ضمن قطاع الرعاية الصحية في دولة الإمارات العربية المتحدة.

**تصميم البحث/ منهجيته/ أسلوبه:** تبحث الدراسة في العوامل التنظيمية التي أدت إلى قيام إدارة فعالة للمخاطر المؤسسية. وقد تم تطبيق منهجية كمية تستخدم استبانة مسحية عبر الإنترنت، شملت 100 موظف في عيادات تشافي الفطيم. ولإعطاء تمثيل أفضل لمجموعة الرعاية الصحية تشافي، فقد اعتمد إطار أخذ العينات على عينة عشوائية طبقية من مجلس المديرين، والإدارات العليا والصغرى. وقد طُرِحَ على المشاركين أسئلة حول العوامل التنظيمية التي أسهمت في تطبيق إدارة فعالة للمخاطر المؤسسية في المؤسسة، حيث تناولت الأسئلة جوانب الحوكمة والثقافة في مؤسستهم، وخطط تطوير الاستراتيجية، والإدارة المستمرة للمخاطر، والمعلومات والتواصل، والأدوار والمسؤوليات المنوطة بفريق إدارة المخاطر، والمراقبة والسيطرة ضمن المؤسسة.

**النتائج:** وفقاً للبيانات التي تم جمعها باستخدام برنامج التحليل الإحصائي SPSS، فإن هذه الدراسة تحمل دلالة إحصائية، يُضاف إلى ذلك بأن العوامل التنظيمية الستة في الدراسة لها ارتباط إيجابي بتطبيق إدارة فعالة للمخاطر المؤسسية. ومع ذلك، فإن المستويات المختلفة لتوافق كل متغير مستقل مع متغير تابع، تشير إلى اختلاف في مستويات مساهمة كل عامل تنظيمي في التطبيق الفعال لإدارة المخاطر المؤسسية. وتشير النتائج إلى أن المؤسسة قيد الدراسة تتمتع بقدر كبير من التوافق والترابط حول مساهمة الحوكمة والثقافة، وتطوير الاستراتيجية والمراقبة والسيطرة في التطبيق الفعال لإدارة الحوكمة المؤسسية، بينما كان التوافق فيها متفاوتاً بين إدارة المخاطر والأدوار والمسؤوليات والمعلومات والتواصل، والتطبيق الفعال لإدارة المخاطر المؤسسية.

**مُحدِّدات البحث والآثار المترتبة عليه:** تم إجراء الاستطلاع على موظفي الإدارة في عيادات تشافي الفطيم، من خلال رابط على الإنترنت لجوجل فورمز، مما يمثل قيوداً على العينة المتنوعة من الموظفين المشاركين في الاستبانة. وعلاوةً على ذلك، فإن الدراسة محصورة بمؤسسة وحيدة للرعاية الصحية، مما يحدّ من آثار العوامل التنظيمية على التطبيق الفعال لإدارة المخاطر المؤسسية.

**الآثار العملية المترتبة على البحث:** رغم هذه التطورات، لم يتم إجراء سوى القليل من الأبحاث حول العناصر التي تسهم في تبني الفعال لإدارة المخاطر المؤسسية. وقد أدى الطلب على تبني إدارة المخاطر المؤسسية إلى دفع المؤسسات لتبنيها في مجموعة متنوعة من القطاعات، من بينها قطاع الرعاية الصحية، وذلك لكونها ضرورية في معالجة إدارة المخاطر في الرعاية الصحية، بحيث يتم استخدامها في الحفاظ على سلامة المرضى.

**القيمة/ الأصاله:** رغم كثرة المقالات والدراسات التي تناولت إدارة المخاطر المؤسسية، لا يتوفر سوى القليل من البيانات حول التطبيق الفعال لإدارة المخاطر المؤسسية في مؤسسات الرعاية الصحية في منطقة الشرق الأوسط عموماً ودبي خصوصاً.

**الكلمات المفتاحية:** إدارة المخاطر، إدارة المخاطر المؤسسية، مؤسسة الرعاية الصحية، العوامل التنظيمية، الحوكمة والثقافة، تطوير الاستراتيجية، وتقييم المخاطر، المراقبة والسيطرة، الأدوار والمسؤوليات، والمعلومات والتواصل.

## Acknowledgement

It gives me great pleasure to present my dissertation, which is titled “Enterprise risk management in healthcare organizations”. This research topic has given me a broad understanding of enterprise risk management, particularly in healthcare organizations.

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## List of Abbreviations

| <b>IFAC</b>        | <b>INTERNATIONAL FEDERATION OF ACCOUNTANTS</b>                   |
|--------------------|------------------------------------------------------------------|
| <b>AS/NZD 4360</b> | Australian and New Zealand standard for risk management          |
| <b>PDM</b>         | Precedence diagraming technique                                  |
| <b>GAN</b>         | Generalized activity network                                     |
| <b>DSM</b>         | Design structure metrics                                         |
| <b>HAZOP</b>       | Hazard and operability study                                     |
| <b>OPEC</b>        | Organization of petroleum exporting countries                    |
| <b>COSO</b>        | Committee of sponsoring organizations of the treadway commission |
| <b>ISO:31000</b>   | International organization for standardization                   |
| <b>CRO</b>         | Chief risk officer                                               |
| <b>WHO</b>         | World health organization                                        |
| <b>HIROC</b>       | Health insurance reciprocal of Canada                            |
| <b>NHS</b>         | The national health service of the United Kingdom                |
| <b>ASHRM</b>       | The American society of healthcare risk managers                 |
| <b>TOH</b>         | The Ottawa hospital                                              |
| <b>MOHAP</b>       | The ministry of health and prevention                            |
| <b>DOH</b>         | Abu Dhabi department of health                                   |
| <b>SEHA</b>        | Abdu Dhabi health service company                                |
| <b>DHA</b>         | Dubai health authority                                           |
| <b>OECD</b>        | The organization for economic co-operation and development       |
| <b>NCEMA</b>       | National emergency, crisis, and disaster management authority    |
| <b>CCC</b>         | Command and control center                                       |

# Chapter 1 Introduction and Background

## 1.1 Introduction

In the business sector, risk is defined as any circumstance that could compromise an organization's capacity to meet its goals. Risk management often entails detecting risks and limiting them by the elimination of hazards, the installation of procedures to decrease risks, the education of staff on how to avoid risks, or the purchase of insurance to offload the financial burden of risks. Organizations that are more robust emerge in a competitively advantageous position, suggesting that a well-executed risk management program can be a viable business strategy (Mills Barbeau 2019). Every organization faces risk, and those that incorporate risk management approaches into their business planning and performance management are better positioned to meet their strategic and operational goals (Levett et al. 2017). Healthcare organizations, like other major corporations, use bonds, loans, and capital markets to fund their operations. Souza (2013) explains that financial distress and uncertainty, economic shocks, disruptive events and new competition or technology can all destabilize the organization quickly. Especially considering the complexity of a hospital's financial structure, which must rely on several revenue streams and indirect resources (Souza 2013). In addition to the current economic context, where cost reduction and quality improvement are key goals. As a result, improving hospitals' financial health and developing procedures that lead to better management of such complex environments are major difficulties and challenges to implement effective organizational risk management, as stated by Gallagher et al. (2006); Troyer, Brashear & Green (2005). Thus, a holistic approach to risk management can help organizations

better manage risks and opportunities, increasing their ability to produce and protect value for stakeholders. Rather than looking at risk management in silos, enterprise risk management (ERM) takes a holistic approach to it. As a result, it has gained a lot of momentum as a potentially successful approach to risk management issues (COSO 2004).

Consequently, healthcare organizations are rapidly adopting and adapting risk management and enterprise risk management (ERM) concepts from other industries to the health-care setting. At the same time, the primary goal of health-care delivery, which is to provide high-quality care to patients, is being restored. As a result, to fill this void, this study investigates the implementation of ERM in healthcare organizations in the Middle East, particularly in Dubai. The aim of this paper is to study organizational factors that directly influence implementation of effective ERM in healthcare organizations

## 1.2 Research Background

In the healthcare industry, risk and patient safety are intrinsically linked, hence the disciplines of safety and risk management are so tightly connected (Potts III, Haan & Weiss 2017).

As a result, deploying a risk management framework in an organization is crucial and will require assessing and documenting both the external and internal environments through identifying risk owners with assigned accountability and responsibilities within the organization who will allocate resources and establish internal and external communication mechanisms, and then further developing together a risk management strategy for the entire organization that is embedded in the organization's goals and culture (Potts III, Haan & Weiss 2017). Thus, these organizational risk management programs when embedded within enterprise, have been proved to be a highly successful tool for senior leadership teams to capture, assess, and manage risks across the enterprise in the broader business community (Brazeau, 2008).

Enterprise or organizational risk management broadens the traditional risk function to cover financial, strategic, operational, and other risks (Steinberg, 2004, p. 17). ERM in healthcare is defined by the American Society for Healthcare Risk Management as "a holistic framework for making risk management decisions that maximize value protection and production by managing risk and uncertainty, as well as their connections to total value " (Levett et al. 2017). Thus, when using ERM process organizations can recognize risks sooner, spend time and expertise in understanding the nature of challenges, and support timely and informed strategic decisions in keeping with the organization's overall values and mandate by taking a coordinated approach to risk management.

However, the term "enterprise risk management" (ERM) is still a relatively new concept within

healthcare organizations. Recently, its impact is felt at all levels of large healthcare organization, even if it hasn't yet become part of healthcare culture specially that it is a high-risk workplace with significant managerial complexity and frequent risk exposure (Mills Barbeau 2019). This is largely because enterprise risk management originated in the corporate realm rather than healthcare. Some ERM ideas, which originated in the corporate and financial sectors, may not transition well to the healthcare setting. When ERM has been attempted in health care, traditional ERM principles have frequently been altered, rather than accepted, by healthcare, and these have been tailored while being applied to the industry's setting (Martin 2020), other approaches have tended to impose a pre-packaged solution on the management process. While this may have positive results in some situations, this style of pre-packaged program implementation is far less successful than one that understands that a health organization is unique and founded on the unique personal talents and skills of its workers. They must then restore the primary purpose of health-care delivery, which is to provide patients with high-quality care, with value defined as the results gained for each unit of investment (Porter 2010). Therefore, this research will explore risk management and its move to approach it holistically. It further studies different risk management frameworks in a comparative view and explicit in effective ERM organizational components, factors, and implementation in healthcare. In addition, it provided global perspective of ERM in healthcare, and a glimpse of UAE success story against covid-19. The research then used quantitative methodology to study organizational factors that influence effective ERM.

### 1.3 Research Problem

As healthcare organizations tend to implement and adapt the concepts of risk management and Enterprise risk management (ERM), which has been used in a variety of business settings, has been applied to the health-care setting. At the same time restoring the primary purpose of health-care delivery, which is to provide patients with high-quality care. To implement risk management in healthcare through holistic approach of ERM will require understanding organizational factors that contribute for the ERM framework effectiveness. As investigating through literature and creating in-depth comprehension about risk, different risk management frameworks, ERM stages and global perspective of an effective implementation. This will provide roadmap to implement effective ERM in healthcare organizations. Thus, despite the large number of articles and studies into enterprise risk management (ERM), there are little data about effective ERM implementation in healthcare organizations in the Middle East specifically in Dubai.

## 1.4 Research Aim, Objectives, and Questions

Despite the large number of articles and studies into enterprise risk management (ERM), there are little data about ERM implementation in the Middle East specifically in Dubai. Risk management and enterprise risk management (ERM) techniques that have been employed in other industries are rapidly being implemented and adapted to the health-care context. Simultaneously, the primary purpose of health-care delivery, which is to provide patients with high-quality care, is being reestablished. As a result, this study investigates the adoption of ERM in healthcare organizations in the Middle East, particularly in Dubai, to address this gap.

The aim of this research is to explore organizational factors that have a direct impact on effective implementation of ERM in healthcare organizations. The outcome of this research will introduce a new framework that will be improving the implementation of an effective ERM in Healthcare organization. Finally, the research will provide practical and theoretical recommendation on the effective ERM implementation in healthcare sector.

The research objectives are the following:

- To explore the literature on the different ERM framework, components, and do a comparative approach on different risk management frameworks.
- To explores the global implementation of ERM in healthcare through detailed literature review of The American Society of Health Care Risk Managers (ASHRM 2006), the Health Insurance Reciprocal of Canada (HIROC 2014), and the National Health Service of the United Kingdom (NHS).
- To study the different organizational factors that contribute to establishing effective ERM implementation in healthcare organization.

- To develop a framework that will link the different organization factors to the effective implementation of ERM in Healthcare organizations.
- Provide recommendation for the effective practical and theoretical effective implementation of ERM in healthcare organization.

Based on the research objectives, the following were identified to be the research questions:

- Q1 What is the outcome of the comparative approach on different risk management frameworks?
- Q2 What is the main practices on global implementation of ERM in healthcare?
- Q3 What are the organizational factors that contribute to establishing effective ERM implementation in healthcare organization? (Secondary research questions)
  - What is the relation between ERM effectiveness and governance and culture in healthcare organizations?
  - What is the relation between strategy development and ERM effectiveness in the healthcare organization?
  - What is the link between ongoing risk assessment and effective ERM?
  - What is the connection between supported communication and information sharing on establishing effective ERM in healthcare organization?
  - What is the connection between organization controls and monitoring and effective ERM in healthcare organization?
  - What is the relationship when having distributed roles and responsibilities for risk management and effective ERM in healthcare organization?

Q4 How the different organizational factors relate to the ERM effectiveness?

Q5 What are the main practical and theoretical recommendations on improving ERM Effectiveness in Healthcare organizations?

## 1.5 Research Significance

The significance and value of this work may be linked to several factors including, the fact that it is one of the first studies of its kind in Dubai, focusing on enterprise risk management in healthcare. Also, The Healthcare providers are adopting and adapting existing enterprise risk management principles to healthcare organizations, resulting in a lack of healthcare understanding and background. Therefore, this study will add to the limited studies on ERM in healthcare that have been published and establish a better knowledge of effective ERM approaches and improving them for healthcare necessitates this study. In addition, this study will look at how to contribute to the development of a successful ERM framework in Dubai's healthcare organizations.

## 1.6 Research Framework

To date, there are limited empirical studies reported in the literature that have attempted to study ERM in healthcare organizations in Dubai. The focus of this study is to help improve ERM implementation, by studying organizational factors that contribute to effective ERM implementation.

The data gathering for the study was divided into three systematic connected stages. The first stage of the research involved an intensive literature review of different approaches to manage risk, current data, and literature of risk management and ERM implementation and evidence concerning effective enterprise risk management in healthcare organizations.

The findings from Literature review in first stage, served as the foundation for the second stage of literature review, which consisted of a structured investigation into the experiences of global healthcare organizations along with UAE risk management during Covid-19.

In the third stage, a questionnaire was developed based on six main organizational factors that have direct influence on ERM implementation effectiveness. The questionnaire was answered by Tashafi Al-Futtaim clinics board directors, senior and junior management (see Appendix 1). Questions within the survey were directly linked to the suggested changes in ERM implementation in healthcare organization, with each question supported by evidence reported in the literature.

From the analysis of the previous three stages, the author proposed focusing on specific organizational factors to implement effective ERM in healthcare organizations in Dubai

## 1.7 Research outline

Chapter One: Introductory chapter. This chapter introduces risk management and enterprise risk management by outlining research background, aims and objectives, the research questions, as well as explaining the research problem, framework, and significance.

Chapter two: Literature review. The second chapter of the research involved an intensive literature review of different approaches to manage risk, current data and literature of risk management and Enterprise risk management and ERM during Covid-19, then sets a comparative approach of different ERM frameworks. It then further investigated the experiences of global healthcare organizations along with UAE risk management during Covid-19.

Chapter three: Research Methodology. The research conceptual framework and study variables were outlined in this chapter. A sample study was chosen for quantitative methodology to test the conceptual framework. After that, a full detailed description of methodology was written.

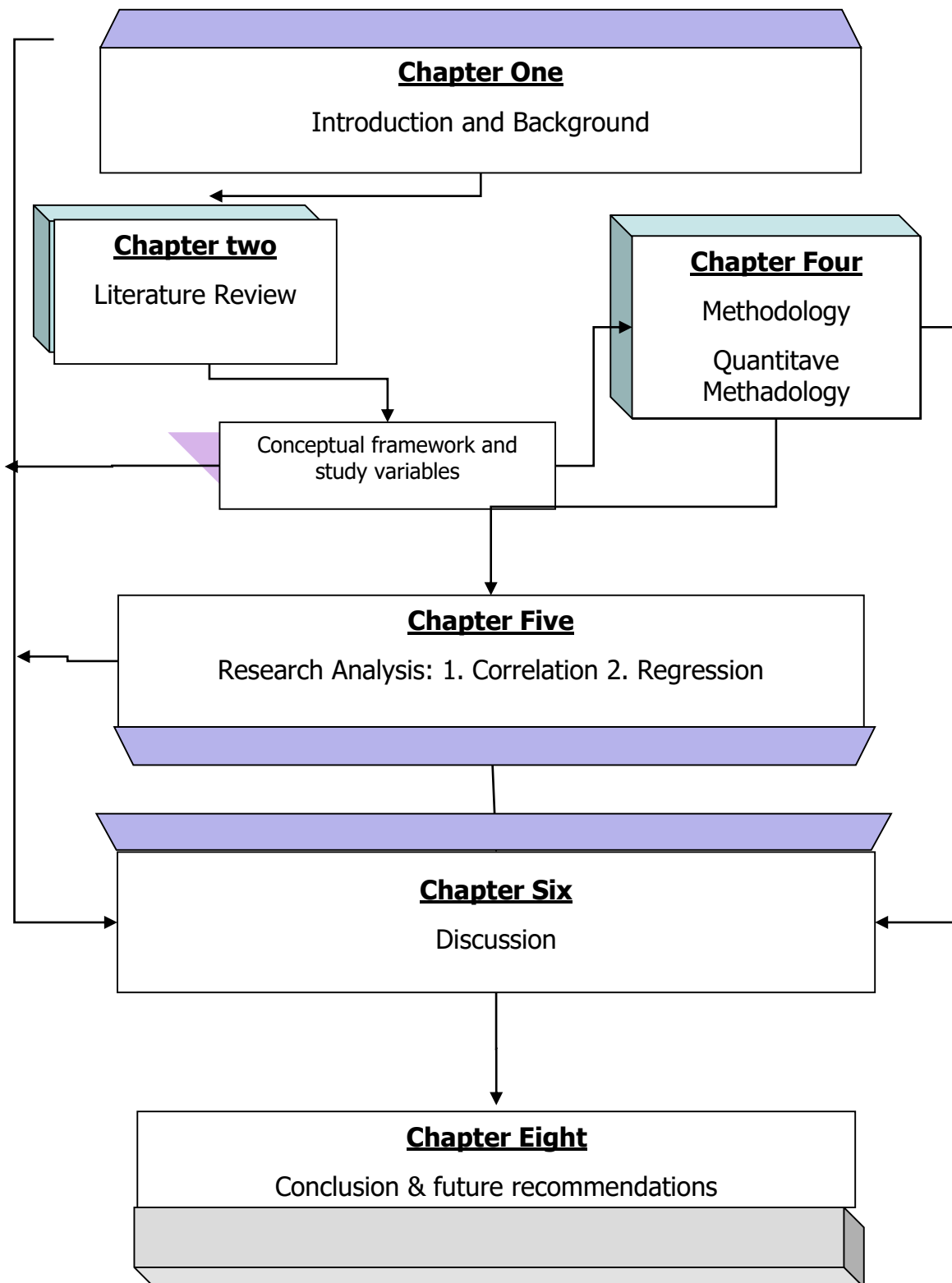
Chapter four: Data analysis. This chapter examined data from a questionnaire survey and used SPSS to analyze it. The section explores into SPSS results such as Reliability, significance, validation, correlation, and regression of independent variables in connection to the dependent variable, as well as the strength and extent of agreement between them.

Chapter five: Discussion. This section examines data from SPSS, analyzes the findings considering the literature, and discusses the main findings in relation to ERM in healthcare organizations.

Chapter six: It goes on to give theoretical and practical recommendations to healthcare organizations based upon literature review, methodology and analysis data results of the study.

Chapter seven: Conclusion and future recommendation. Finally, this chapter highlights and explains the study's key points and conclusions. It summarizes the most important elements in proportion to research's goals, objectives, and questions. It also lays forth recommendations for contribution to knowledge and future research.

Figure 1 Research Outline



## Chapter 2: Literature Review

### 2.1 Introduction

In daily life, Risk is said to overcome all human situations and exists in all organizations in different sectors. Thus, understanding risk dimensions and risk management is essential for all organizations (Hardy 2010). This could be accomplished through effective risk management to create the best possible balance of opportunity and risk (Vedpuriswar 2006). This frequently means that the organization may become exposed to new risks in the process of pursuing a balance of opportunity and risk in adopting the most preferred alternatives, necessitating the need for continuous awareness and proactive risk management (Vedpuriswar 2006). From this point of view, many organizations now need enterprise risk management (ERM) since it improves decision-making and aids in the execution of an organization's vision, goals, and objectives.; additionally, it broadens the scope of risk management beyond associated and accidental losses to include other aspects of an organization's overall operations (Abah 2019).

### 2.2 Risk and Uncertainty

In everyday life, there is always the possibility that something will go wrong. According to the Risk Management Standard, risk is defined as "the combination of the probability of an event and its impacts" (Institute of Risk Management 2002), with risk management focusing on both positive and negative aspects of risk (Collier 2009). Risks, according to the International Federation of Accountants (IFAC) study, are "unforeseeable future events that may have an impact on the

strategic, operational, and financial objectives of the organization". The IFAC study shifted the focus of risk management from a negative view of hazard to a positive view of risk management as a critical component of long-term shareholder value creation. As the organization's risk management calibrates and realigns the link between risk, growth, and return. Moreover, according to the Turnbull Report risk is "Any incident that could have an influence on a listed company's performance, including ethical, environmental, and social risks"( Institute of Chartered Accountants in England and Wales v. Commissioners of Customs and Excise n.d.)

Knight (1921) distinguished risk from uncertainty by stating that risk is defined as the state of not knowing what will happen hereafter but being able to estimate the probability, whereas uncertainty is the state of not knowing the chances. The first could be estimated, but the second couldn't, making any guesses subjective (Knight 1921).

Project risk is defined as "an unpredictable occurrence or circumstance that, if it occurs, has a positive or negative influence on at least one project objective, such as time, cost, scope, or quality," according to the PMBOK [p. 238] (Duncan 2005). It continues to state that the project's or organization's environment causes risk factors, such as multiple projects running at the same time, ineffective management techniques, and dependency on external partners. Further PMBOK states that project risks arise from the uncertainty that exists in all undertakings to varying degrees. Thus, in my opinion to be able to distinguish between risk and uncertainty, there should be an understanding of their impact on project performance. Risk, as a fact, implies certain knowledge, and hence calculability and controllability, as Nowotny et al. (2001) points out, whereas uncertainty, by definition, denotes a lack of certainty about the state of things.

Some authors believe that uncertainty is bad for business because it interrupts organizational equilibrium, thus managers aim to eliminate it (Lorenzi et al. 1981). According to Knight (1921),

the phrase "risk" is often used to refer to any form of uncertainty, and when examined from the perspective of a positive event, the term "uncertainty" is similarly employed; we speak of the risk of a loss, and the uncertainty of a gain. Risk is defined in a variety of ways in the literature, but it is most generally referred to as the likelihood of project losses (Robert 1992).

However, Clemen (1996) defines uncertainty as "a situation in which assigning a probability of occurrence to an event is impossible," whereas Raftery (2003) finds that uncertainty cannot be measured and can only be inferred via subjective means.

Uncertainty and risks, on the other hand, do not always have a negative impact on organizations; they can also be used to produce opportunities. Weick's research demonstrated examples of businesses that were proactive rather than reactive to the environment, which provides a significant insight into understanding uncertainty in this regard (Weick 1977). Weick (1977) also claims that understanding and sensemaking have an impact on strategic decisions and, as a result influence organizational performance. According to (Perminova, Gustafsson & Wikström 2008) , project managers' perceptions of uncertainty are influenced by their own abilities, intuition, and judgment. Managers' attitudes and perceptions of uncertainty do neither cause nor remove it. This awareness, however, has an impact on how managers logically interpret the issue and choose different approaches. As a result, we may deduce that understanding and managing uncertainty necessitates strengthening project management skills.

Project risk management experts define uncertainty as "having a negative impact on project outcomes by failing to meet project objectives," according to Chapman and Ward (2002), however, these shifts may open new options for the project. In contrast to the standard risk management approach, which assumes risk is uncertainty, risks are recognized as one of the consequences of ambiguity. As a result, project management capabilities and background influence their attitudes,

decision making and approaching risks and uncertainty. Recently, as when beginning to address specific risk elements, such as when beginning to analyze the nature of Covid-19 being risk or uncertainty (Brown 2020). A fundamental starting point here is to recognize that risk is never just about probabilities, but also entails a specific way of dealing with these numbers in relation to values. The debate over whether the Covid-19 pandemic could be considered a risk has centered on probabilistic arguments. Mortality rates and infection rates have been utilized to explore classification and time-framing, and these figures have been discussed in particular to develop estimations and probabilities (Brown 2020).

*Table 1 Risk vs Uncertainty*

| Risk                                     | Uncertainty                                   |
|------------------------------------------|-----------------------------------------------|
| Perfect knowledge                        | No knowledge                                  |
| Measurable                               | Not measurable                                |
| Can generate estimations and probability | Unable to generate probability and estimation |
| Potential outcomes are known             | Potential outcomes are unknown                |

In conclusion, Experts have put forth a lot of effort to conceptualize and assess uncertainty because they know that it has a big impact on organizational decision-making, actions, and outcomes. (Duncan 1972; Knight 1921). Certain project and risk management literature streams go even further in their attempts to comprehend the impact of uncertainty on organizations, processes, and individuals. According to Perminova (2011), the idea of uncertainty management was developed, which investigates the interrelationships between uncertainty and other aspects of organizational processes to develop strategies for dealing with, and even profiting from, uncertainty.

## 2.3 Risk Management

Unexpected occurrences happen all the time in projects, and they can have either beneficial or bad consequences that cause the project to vary from its original design. Positive outcomes lead to possibilities, whilst negative ones result in losses (Robert 1992). As a result, the risk management process entails utilizing a structured methodology to identify flaws in procedures in order to take prompt mitigation actions to minimize risk, transfer risk, reduce risk likelihood, or reduce risk effect, as well as avoid financial loss as a result of unforeseen events (Robert 1992).

The Australian Standard for Risk Management offers a risk management process to make this achievable. It has seven iterative sub-processes: establishing the risk context, identifying risks, assessing risks, evaluating risks, communicating, and consulting with stakeholders, and monitoring and controlling risk events (Risk Management Standard AS/NZS 4360 1999). In the risk management process, framework establishment entails representing project units such as process and data and their interrelationships (Ahmed et al. 2003). This enables a range of project status representations based on the desired component of the project that is significant for any given reason, such as resource utilization, equipment requirements, budget allocation, stakeholder engagement, contract deliverables, strategic goals, and schedules. This can be done through utilizing project modeling tools and approaches such as Project network diagram, precedence diagramming technique (PDM), generalized activity networks (GANs) and design structure matrices (DSM) are some of the tools available (Ahmed, Kayis & Amornsawadwatana 2007). Ahmed, Kayis & Amornsawadwatana (2007) explicits that risk identification is the process of analyzing a situation to determine ongoing status of the project development during its time line. As a result, the risk identification techniques such as checklists, influence diagrams, cause and effect diagram, hazard, and operability study (HAZOP) and failure mode analysis are some

techniques that are more detailed and require a collaborative approach in order to investigate the project for risk situations. It must be established whether the information can be gathered using quantitative or qualitative means once the risk event has been identified. Amornsawadwatana et al. (2002) goes on to suggest that risk measures necessitate the use of two metrics of risk probability and risk consequence, which are used in the computation of risk size and risk analysis, resulting in risk mitigation plans for risk situations. The goal of risk analysis, according to Ahmed, Kayis, and Amornsawadwatana (2007), is to determine the impact of risk factors on the project. Furthermore, because risk events have a cumulative influence on one or more components of the project, they can be set together and dealt with at a higher level in the long term rather than focusing on each risk event separately, which would lead to the project being micromanaged. To imply that, Several methodologies for project analysis that are currently used in literature can also be used for risk analysis such as probability impact grid, fault tree analysis, event tree analysis and sensitivity analysis and simulation (Clemen 1996). After analyzing the risk, the project strategy, budget, and schedule must be evaluated considering the risk event to establish risk mitigation options and incorporate the most relevant option in a risk mitigation plan during risk assessment. Ahmed et al. (2003) describes some risk-evaluation strategies that can be used, including decision tree analysis (Clemen 1996), portfolio management, and the multiple criteria decision-making method (DeMaio et al. 1994), all of which can be developed based on prior experience, lessons learned, best practices, organizational knowledge, industry benchmarks, and standard procedures. To summarize, risk management examines risk event dimensions to ensure that all controllable occurrences have a plan of action or risk mitigation in place. To respond to this request, either a reactive strategy, also known as a feedback method, refers to risk mitigation steps taken after risk events occur and can be seen as the start of contingency planning, or a proactive or feed forward

approach, where activities like insurance are taken in response to the likelihood of a risk event occurring, is used (DeMaio et al.1994).

To conclude, a framework for risk management solutions can be constructed in relation to the risk management process, with the context formation function carried out utilizing the tools outlined before. This resulted in the creation of a risk structure that will aid the risk management process's subsequent activities and be attached to the process units. After that, a risk query mechanism can be built and imposed on the process model utilizing risk analysis tools to collect quantitative and qualitative data via interactive or collaborative interfaces. The risks that are worth studying further based on the methodology results are then researched and treated because they have a high probability of occurring, having a high potential impact, or leading to new opportunities.

Thus, to provide risk-management strategy for the organization, there must be an understanding of type of risk identified being either pure or speculative risk. In more detail, pure insurance risks are those with solely negative outcomes, such as fire, accident, or theft, whereas speculative finance risks, such as stock, credit, or commodity securities, have both positive and negative outcomes (Power 2006). Power (2006) suggests that the word "pure risk" be replaced with "empirical risk" to designate one of the conventional insurance intrinsic threats such as fire, accident, or theft, and that the risk derives from an observable natural process that is essentially immune to human intervention. Additionally, to underline the financial nature of the uncertainty, replace the term "speculative risk" with "market risk" (Power 2006). Interest rates were stable, foreign currency prices were purposely kept within limited bands, and most organizations were not concerned about inflation when the area of risk management initially started, therefore financial risks were not a big worry for most organizations. Indeed, because finance was essentially an organizational field at the time, traditional risk management concentrated solely on pure risk.

Because risk management was developed by people who worked in the insurance sector, the focus was solely on risks that could be insured (Sampieri et al. 2001)

Another reason for traditional risk management's focus on pure hazards is that they frequently reflect the most substantial short-term financial concerns to an organization at the time this field was established. Financial risk, on the other hand, became a substantial source of uncertainty for businesses in the early 1970s, prompting the development of tools to cope with it. These new techniques made it possible to control financial risks in the same manner as pure risks had been for decades. Furthermore, as oil prices starts to rise in the 1970s, OPEC created agreements to decrease output to raise prices. The US Federal Reserve shifted its policy later in the decade to focus on fighting inflation rather than stabilizing interest rates, resulting in a rapid rise and increasing volatility of interest rates in the US, with spillover effects in other countries (Sampieri et al. 2001).

Financial risk has become a key risk for organizations because of the volatility in foreign exchange rates, pricing, and interest rates (D'Arcy 1999). As a result, the traditional risk management is pushed to include a broader area of risk analysis with the introduction of enterprise risk management, financial risk management and other types of risk analysis are included in this category. Thus, risk managers were encouraged to expand their risk analysis to include financial risks. However, it was postponed for a few decades due to the requirement for risk managers to learn about financial risk management (Sampieri et al. 2001).

To add up, this entire risk management process is collaborative and proactive management strategy that requires coordinated segmented approach of risk management in an organization to allow formulation of best decision and framework to manage risk and create opportunities.

According to Collier (2009), the most effective way to define risk management is in terms of enterprise risk management, which entails identifying and managing the risks that an organization faces while pursuing its objectives, as well as ensuring that risk management culture is embedded in the organization. Thus, it covers the entire organization and views risks as opportunities as well as hazards. Typically, risk management is thought of as a way of keeping things on track by recognizing and attempting to neutralize any harmful risk events or threats to performance.

## 2.4 Enterprise Risk Management

Different sorts of information on financial risk and pure risk are likely to be received by the board of directors and other managers establishing the organization's overall risk management plan. The risks, as well as the terminology used to define them and the risk measures, are all distinct. This complicates the task of coordinating the organization overall risk exposure. When the risk management required more than a traditional risk manager to manage an organization risk that will affect its strategy the underlying reason for enterprise risk management was created (Sampieri et al. 2001).

Accordingly, Abah (2019) states that enterprise risk management (ERM) has become a necessity for many organizations today, as it broadens the scope of risk management beyond associated and accidental risks to include other aspects of an organization's overall operations.

ERM is defined by PricewaterhouseCoopers (PwC 2015) as "a discipline that encompasses the full range of an organization's risks, including challenges and opportunities, and integrates them into an enterprise-wide, strategically aligned framework that aids in better decision-making and promotes the achievement of the enterprise mission, goals, and objectives."

Each risk management specialty has its own terminology, approach, and focus. Each, on the other

hand, dealt with a threat to the company. As a result, according to Sampieri et al. (2001), it became evident very quickly that a common risk management strategy would be better to an individual one, and that an integrated approach would be preferred to a silo approach. Because of the clear success of hazard risk management and later financial risk management, managers are attempting to integrate these and other categories of risk into an overall risk management strategy as a holistic approach that includes strategic and operational risks. As a result of this concept, enterprise risk management has been developed (Sampieri et al. 2001).

A number of additional factors have also contributed to the evolution of enterprise risk management. The development of powerful modeling tools required to perform sophisticated risk analysis and examine relationships between variables, as well as recent advances in computing power and the availability of large data bases of financial and other information allowed to examine historical data to identify trends, correlations, and other patterns, has made a significant contribution to the advancement of enterprise risk management (Sampieri et al. 2001).

Nevertheless, an organization with a solid credit rating would have access to money and be able to resist uncertainty after properly examining its vulnerabilities and making suitable preparations through the application of enterprise risk management, allowing businesses to take advantage of business opportunities as they occur and improve organizational performance (Walker 2013).

Because enterprise risk management covers so many parts of an organization's operations and contains so many different types of hazards, no single person is likely to be able to complete the assignment completely (Sampieri et al. 2001). Unlike traditional risk management, ERM is a collaborative endeavor including people with expertise in a range of fields, including traditional risk management, financial risk management, management information systems, auditing, planning, and line operations. As a result, this team approach will prevent traditional risk managers

from focusing solely on risk, instead taking a comprehensive view. Furthermore, for the team to be effective, the team leader must have a fundamental awareness of all the processes involved in the overall process as well as the methodology employed by each department. To engage in enterprise risk management, team members will need to acquire certain additional skills, such as knowing strategy and financial risk management terminology and demonstrating capacity to comprehend new financial risk management instruments, as well as employing simulation and modeling (Sampieri et al. 2001). Moreover, as the ERM has a comprehensive strategy to manage risks it necessitates a strategic shift in focus as a consequence, determining the appropriate level of Chief Risk Officer (CRO) job on the ERM is crucial. The CRO's job is to work with managers to come up with effective risk management strategies. Furthermore, a person with the appropriate qualities to create change is required for the function of CRO. Bromiley et al. (2015) emphasized that successful CRO attributes aid in making improvements in the effect of working and suitable management of ERM activities. The CRO is one of the most significant members of the management team, and is responsible for making good changes in the ERM environment as well as the CRO team also should include a strong element of teamwork and communication in order to improve ERM. A effective CRO is defined by its ability to assist in the creation of the knowledge component of a risk management strategy. Furthermore, Blawert et al. (2007) notes that the CRO should be able to conduct an in-depth investigation into the operations to effectively engage with various stakeholders and regulators, and that the CRO should also have leadership skills in order to lead the team and hold them accountable, as well as develop a risk culture with top management's aid.

Thus, as Arena et al. (2010) demonstrates the role of CRO is to build a cohesive team that has a beneficial impact on the organization and aids in achieving high levels of performance through procedure adjustments and works to improve people's perceptions of risk management initiatives.

Furthermore, risk content reporting can be used to improve risk reporting and transparency management. In order to fulfill the duties The risk management team assists in completing duties between interdependencies in order to effectively run the organization.

To conclude, enterprise risk management is not a new approach to risk management but rather it is a recognition that risk management requires managing all risks, not just a subset of them. CRO can now apply their well-established and successful approaches to risk on a broader and more important scale than before, encompassing a team that includes all aspects of the organization, creating a risk management culture, and improving decision-making scenarios, due to this new emphasis on enterprise risk management.

**Table 2 Differences between traditional risk management and enterprise risk management**

| Traditional risk management        | Enterprise risk management                           |
|------------------------------------|------------------------------------------------------|
| Risk as pure, hazard risk          | Risk in hazard, financial and strategy               |
| Risk identification and assessment | Risk identification,                                 |
| Risk in silo approach              | Risk in integrated approach                          |
| Risk mitigation                    | Risk optimization                                    |
| Owned by risk officer              | Owned by board of directors and all enterprise teams |
| Risk limits                        | Risk strategy                                        |

### 2.4.1 The different ERM frameworks a comparative approach

Over time, various standards have been published to help public and private organizations adopt a proper and successful risk management strategy. There is no one-size-fits-all method to ERM implementation. However, other frameworks have been presented to provide recommendations and implementation processes, such as the COSO ERM, the ISO 31000 risk management guidelines, the AS/NZS 4360 standard, and the Risk Management Framework Canada (Raz & Hillson 2005; Agarwal & Ansell 2016). The decision to investigate these frameworks was based on the fact that they are more structured and provide a better level of analysis of the theme than other smaller frameworks utilized around the world (Rubino 2018).

The COSO ERM framework was initially released in 2004 by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in the United States of America (COSO 2004). The COSO ERM framework defined ERM implementation as well as essential roles and responsibilities in an organization, such as the board of directors, management, and other staff. To achieve organizational goals, the COSO ERM framework provides procedures for risk identification, risk management within internal control boundaries, and quality assurance (COSO 2004). The COSO ERM framework is preferred by many institutions around the world, including the Global Fund (Beasley et al. 2010). Nonetheless, the complexity of the implementation, the lack of strategic integration of the ERM, and changes in the external environment prompted the Treadway Commission's Committee of Sponsoring Organizations (COSO) to update the ERM framework in 2017 (COSO 2017). As a result, the new framework's underlying philosophy emphasized ways risk management is achieved by being carried out as part of the organization, observing not only negative risks, but also potential positive risks or opportunities, which must be

assessed in conjunction with strategy decisions and performance impact assessments (Rubino 2018).

On the other hand, the International Standard Organization's risk management standard 31000:2009 puts out a set of methods to assist enterprises in reducing risk. According to this international standard, organizations should develop, implement, and continually improve a framework to include risk management into their overall governance, strategy and planning, management, reporting processes, policies, values, and culture (ISO 2009). Risk management can be applied to an entire organization, as well as specific departments, projects, and activities, at any time and at all levels. This standard establishes the concepts and procedures for dealing with any sort of risk in a methodical, transparent, and credible manner, independent of scope or context, as summarized by the Institute of Risk Management (2018). In 2018, the ISO 31000:2009 recommendations were modified to assist organizations in applying risk management principles to improve risk planning and assessment, as well as implement more effective and simple decision-making measures. The new ISO 31000 emphasizes the need of top-level management leadership in risk management, as well as the continual need for external involvement and, finally, the value of interactive risk management in an organization (Institute of risk management 2018).

The Framework for Risk Management - Canada, which replaced the Integrated Risk Management Framework (2001) and the Integrated Implementation Management Guide, was also released in 2010. This framework is a tool designed exclusively for public entities. It helps the governments recognize, analyze, embrace, and maximize on new challenges and opportunities in this sector, which is known for its proactivity and complexity. The goal of this framework is to give Deputy Heads assistance on how to implement effective risk management procedures at all levels of their organizations. This will aid strategic priority setting and resource allocation, as well as informed

risk tolerance decisions and improved results. It also gives them guidelines and advice on how to conceive their roles as risk management leaders and how to integrate risk management into their organizations. According to Rubino (2018), when the risk management framework is effectively applied in Canada, it allows federal government entities to actively adapt to change and uncertainty by using risk-based information to make better decisions. This framework's risk-based approach to risk management gives departments and agencies the flexibility to customize management solutions to their specific mandates and goals (Rubino 2018).

On the other hand, the AS/NZS 4360 framework is an important instrument for guiding enterprises through risk management. This standard was first issued in 1999 by the Joint Standards Australia and New Zealand Committee on Risk Management, and it was later updated with the publishing of the 2004 and 2009 editions. According to Rubino (2018), this international standard provides risk management principles and fundamental guidelines that any public, private, or community-based organization, association, group, or individual can use. The standard can be applied to a wide range of activities throughout an organization's life cycle, including strategies and decisions, operations, processes, functions, projects, products, services, and assets. The standard is meant to provide general guidance rather than achieve risk management standardization across enterprises. The eleven ISO principles were introduced in the most recent edition, which increased the framework's applicability (Rubino 2018).

To sum up, the standards examined give recommendations and basic concepts that encourage and enable the adoption and development of risk management activities in an effective and efficient manner. Both the ISO 3100 guideline and the AS/NZS 4360 standard explicitly state that they are not intended to promote risk management uniformity across organizations, and that organizations must consider their unique needs, objectives, context, structure, operations, processes, functions,

projects, products, services, or assets, and the specific practices they employ, whereas COSO frameworks are frequently regarded as highly abstract conceptual frameworks. Finally, the Canadian Framework for Risk Management makes guidelines for implementing ERM in the public sector.

Even though they have recently been updated, these frameworks still have some restrictions. Existing risk management frameworks are usually loaded with inconsistencies in structure, standards, and language, making them difficult to comprehend and apply (Institute of risk management 2018)

At the same time, many standards focus on the fundamental phases of the risk process, ignoring more specialized components such as process management and policy and procedure creation. Furthermore, terms like risk culture and risk appetite are frequently used in multiple contexts in an ambiguous manner as stated by Bromiley et al. (2015).

**Table 3 Comparison of main ERM Frameworks**

| <b>ISO 31000 (2009/2018)</b>                              | <b>COSO 2004</b>                               | <b>COSO 2017</b>                                  | <b>The framework for risk management - Canada</b> | <b>AS/ NZS 4360</b>                        |
|-----------------------------------------------------------|------------------------------------------------|---------------------------------------------------|---------------------------------------------------|--------------------------------------------|
| Provide principles and guidelines                         | Provide information and communication of roles | Provide information, communication, and reporting | Provide principles, guidelines                    | Provide principles, guidelines             |
| Continuous risk identification, assessment, and treatment | Risk identification, monitoring and control    | Risk control and performance and strategy         | Integrated risk management                        | Risk assessment, treatment, and monitoring |
| Interactive risk management                               | Internal environment                           | Risk management key role in strategy decision     | Effective risk practices                          | Interactive risk management                |
| No uniformity of risk management                          | Internal environment                           | Governance, and culture                           | For public organizations                          | For Public, private, group, individual     |

## 2.4.2 ERM and Covid-19

The novel coronavirus strain responsible for the coronavirus disease 2019 or Covid-19 has spread to 213 nations and territories worldwide since its discovery in December 2019 in Wuhan, Hubei Province, China (Abbas Zaher et al. 2021). When compared to earlier outbreaks since the 1918 Spanish Flu pandemic, the Covid-19 outbreak is unique in terms of global scope and quantity of infections. In response to the urgent need to stem the disease's spread, significant restrictions on mobility and association have been established around the world. Border closures, lockdowns, and social distancing requirements were mandated. Further, Restriction and bans on large-scale events have all had a negative impact on economies and communities. According to WHO (2020), as of December 10th, 2020, the number of people infected with Covid-19 had surpassed 68 million, with over 1.5 million victims (Pagach & Wieczorek-Kosmala 2020)

Furthermore, while our knowledge of Covid-19 is growing, it is still restricted, and we are unable to forecast the disease's future progression or longevity. Finally, the economic cascading impacts of the Covid-19 pandemic, as increased by globalization and interdependence of countries, cast doubt on the timing of recovery from the pandemic's consequences. As we observed shortly after the pandemic spread in Europe and the United States, the enforced limits created serious operational interruptions in a variety of organizations and sectors. The possibility of a wave of bankruptcies and a rise in structural unemployment, as well as the fears. For centuries, risk management has primarily been used to control risks within the business unit or silo where the risk was contained, such as finance and treasury, sales customer loyalty and retention, human resource succession risk, and so on. In the mid-1990s, risk management took on a more holistic, integrative

component, suggesting the management of a risk portfolio throughout the entire organization. The term ERM (enterprise-wide risk management) was conceptualized in this context to distinguish this broader perspective from the previous narrow silo approach (Bromiley et al. 2015). As a result, the ERM framework is particularly concerned with risk management's alignment with corporate governance strategies, with a focus on risk appetite definition and board risk oversight (Beasley et al. 2015).

ERM has several interconnected stages as a continuous process, it all starts with risk identification, which comprises considering the dangers and opportunities that could have an impact on the company's success. The probability (frequency of occurrence) and severity (consequences, such as potential damage) of the previously identified hazards are then assessed. The risk assessment results are crucial for the next step in the process, which is determining the optimal risk treatment alternatives (Bromiley and Rau 2016).

Without a question, the Covid-19 pandemic is an example of a risk that, due to its unique characteristics, has evolved and impacted ERM systems on an unprecedented scale. In reaction to the Covid-19 crisis, organizations throughout the world reassessed their risk identification, analysis, and evaluation processes to better respond to continuing and emerging risks, communicate with stakeholders, and better align risk management with strategy. Furthermore, the crisis has underlined the necessity of considering ERM as a strategic process that adds value to a business rather than just a compliance duty (Pagach & Wieczorek-Kosmala 2020).

The organization's initial response to the pandemic may consist of short-term measures to stabilize the situation and get it through the crisis. According to Smith et al. (2020), organizations should respond to the current crisis in three stages: first, quickly respond to urgent pandemic needs, then shift resources to ensure stability by assessing all risks to determine which risks require immediate

attention and which can be addressed later in the process, considering risk prioritization, risk scale, and risk score in the risk register. Finally, implement changes in policies and roles to ensure holistic approach and further construct or activate contingency plans to reinforce long-term success. The role of the board of directors or governors, according to Pagach & Wieczorek-Kosmala (2020), is to regularly monitor the impact of Covid-19 on the organization's operations, understand how management is assessing the impact, and consider whether the risk managers' response to the pandemic is acceptable. Furthermore, the chief risk officer (CRO) will provide information and reports to the board of directors and management; following that, this information should be communicated in both management discussion and analysis with the risk management team to communicate and inform risk related information and new policies related to Covid-19, thereby strengthening the ERM organization and its centralized role. Many risk managers have simply served as compliance officers and are now expected to play a vital role in crisis management and business continuity. Thus, to conclude the importance of having trained employees to develop risk culture communication can help to strengthen the effectiveness of ERM process.

Furthermore, organizations must consider current global circumstances in terms of concurrent pandemic challenges induced by demographic, economic, operational, and strategic concerns. In this situation, an examination of ERM through a strategic perspective is essential. This entails examining risk scenarios with a special focus on how the organization's most significant assets and value drivers are affected, to sustain these value drivers in future crises and secure the organization's existence.

ERM strategies have aided firms in dealing with crises as it considers global as well as organizational-level elements and provide the best feasible resolution to implement effective ERM. Thus, as the ERM considers all of an organization's internal controls, such as the

organization's strengths and skills and aids in the planning of financial matters based on market conditions during covid-19. At the same time, it analyzes whether new opportunities for the organization are available to maximize value protection and production. In addition, the ERM reviews regulations and procedures on regular basis, and employee feedback is considered. As a result, all these elements have a direct impact on the functioning of the company. ERM reduces an organization's overall risk, allowing it to perform better and adhere to corporate governance and strategy.

To sum up, the effective implementation of Enterprise Risk Management (ERM) process during Covid-19 provided better understanding of how to manage risks, prioritize while involving the enterprise in decision making process. Understanding the significant risks within this framework allows the organization to assess risk and its potential impact, as well as focus thought processes and decision-making in a dynamic, fluid, and emerging risk environment.

## 2.5 ERM in Healthcare

According to PricewaterhouseCoopers, PwC (2015), the usage of ERM is growing more common among public sector firms, with only 44% not having implemented one and 80% having implemented one during the last five years. Most organizations now require some form of ERM strategy, whether they have a quality focus, such as ISO 9001, or a focus on a performance or strategy initiative, such as COSO ERM, or a risk focus, such as ISO 27001; environmental sector perform ISO 14001, food sector perform ISO 22000, or labor safety is handled by ISO 18000. Thus, through establishing appropriate risk management process to manage performance within the objective and vision of the organization (PwC 2015).

Risk management in healthcare refers to the clinical and administrative systems, processes, and reports that are used to detect, monitor, analyze, mitigate, and prevent threats. Healthcare organizations utilize risk management to safeguard patient safety proactively and systematically, as well as the organization's assets, market demand, accreditation, reimbursement levels, brand value, and community accessibility. Going further, risk management in health care has focused on individual categories of risk as silos and how each risk may affect one area of care or treatment, through implementation of traditional risk management (Martin 2020). This causes risk management to be functionally offloaded or substantially assigned to the risk manager, rather than being a wide organizational understanding shared by all levels of the organization (Carroll 2011). Therefore, the goal of ERM is to deliberately shift accountability away from a single individual or risk manager and distribute it widely to highlight the most significant risks to the entire enterprise, whether those risks are encountered frequently or have never been considered (Behamdouni & Miller 2010)

Enterprise Risk Management (ERM), as Carroll (2014) explains, is a business decision-making process for recognizing and managing risk in the workplace. ERM programs follow the same procedure as traditional risk management programs, with the exception that instead of simply preserving assets, the risk management professional now aims to create value and optimize risk opportunities. The risk management process includes processes such as risk and opportunity identification, risk evaluation and assessment, strategic risk response and implementation, and review, evaluation, and monitoring.

According to Carroll (2014), enterprise risk management (ERM) is a business decision-making process for recognizing and managing risk in the workplace. ERM programs are like traditional risk management programs, except that instead of simply safeguarding assets, the risk management

professional now tries to create value and maximize risk opportunities. Risk and opportunity identification, risk evaluation and assessment, strategic risk response and execution, and review, evaluation, and monitoring are all part of the risk management process. Integrated risk management, or ERM, understands that hazards are interconnected and can occasionally cascade, compromising patient safety. According to Potts III, Haan & Weiss (2017), ERM also provides a framework for detecting and responding to all potential threats to the organization. Furthermore, ERM is a means of promoting value-focused management in health-care organizations, primarily through the adoption of a management plan based on corporate values (Troyer, Brashear & Green 2005; Celona, Driver & Hall 2010).

Further, Celona, Driver & Hall (2010) describe that one of the reasons for employing ERM models in hospital environments is to increase performance while considering the characteristics that distinguish hospitals from other companies. In addition, the use of ERM methods in hospital corporate management has been described in the literature as a strategic approach to improving service quality (Haney, Church & Cockerill 2013; Bruney and Salter 2014) and ensuring the financial viability of health-care enterprises in the market share (Gallagher et al. 2006).

Despite significant progress, healthcare organizations still lag major corporations, public companies, and financial services firms in terms of ERM program deployment and maturity, according to Carroll (2014). Many healthcare risk-management professionals use ERM techniques to control clinical and patient-safety risks in new programs, initiatives, and services, but often fail to extend ERM strategies beyond those risks, missing out on a tremendous opportunity to increase or generate value (Carroll 2014).

Due to differences in goal, vision, culture, and strategic direction, each healthcare organization's ERM program will be unique. Each group can adopt these characteristics in a way that takes into

consideration the highlighted distinctions. Flexibility is critical in ERM because there is no such thing as a one-size-fits-all solution. Knowing this from the beginning will enable healthcare risk management professionals to create and modify basic structural components of the framework to meet their own organizational needs, particularly as they pertain to different delivery environments (Carroll 2014).

As explained in American society for healthcare risk management (ASHRM), The Governing Body known or widely recognized as the Trustees, Governing Council, or Authority is elected or appointed by the organization, oversees establishing the ERM strategy. Through which management's plan for improving enterprise performance is set by developing the strategy to achieve goals on the long term. Healthcare Organizational strategy is intrinsically tied to the vision, mission, goals, and objectives of the organization. The governing body further approves the ERM plan and framework and oversees the ERM Program. With today's complex and rapid shifts in healthcare, organizations create six months to two year strategic plans rather than 5 or more years strategic plans (Carroll 2014).

Going further, The Governing Body in ASHRM will review and approve the ERM plan, as well as provide advice and input on the framework and structure of roles and responsibilities within the healthcare organization. To ensure effective ERM program deployment, there should be routine status reports on regular basis to oversight progress (Carroll 2014). To bring this to practice in healthcare organization, along with quality outcomes, performance, and employee satisfaction this requires organizations culture to support the ERM program. To accomplish that, Sandrick (2010) claims that having the ERM team's position in the organizational hierarchy directly below the executive board level, as well as direct links to the hospital's other large-scale systems, such as legal, financial, health care, and quality assurance, will create a condition of management

autonomy that allows for the generation of information for governance. This underlines the need to have to simplify the construction of a value approach for the health organization. This requires the organizational structure to include ERM department immediately below the level responsible for strategic decision-making. Thus, in support to embed ERM into healthcare organizations, Miller, Miginsky & Connelly (2012) highlighted the need to underline the importance of employee participation in the hospital's organization as well as the requirement for staff to be trained and informed about ERM. This was further concurred by Bruney and Salter (2014), in which stated that to establish ERM corporate culture, it requires anticipating professional education to all employees to further initiate enterprise risk management.

Moreover, to develop corporate culture of ERM, continuous professional education programs and improvement are required. The amount of training required to create and implement an efficient ERM program will vary depending on the organization's size and experience, as well as the education and abilities of its employees (Chapman, Ward & Wiley 2012).

Other organizations, on the other hand, may choose to hire a specific number of governors with risk management skills or experience (Martin 2020). A well-developed ERM program comprises a few key components that may be split down into four categories are; identify, assess, prioritize, and response, these if implemented in a regular reporting cycles, backed by rigorous policies and processes, as well as performing internal assessments, and undertaking external auditing can help organizations ensure that these measures are followed will develop a solid ERM framework (Martin 2020). In detail, ASHRM demonstrates steps undertaken to establish ERM in healthcare organizations. First, as risks and opportunities are recognized, they should be recorded on a master list known as a risk list. A risk list is a list of all risks and opportunities found in a healthcare setting using various tools, processes, and systems in no order. Secondly the risks are sorted and

segregated to different risk domains which simply categorizing similar risks into manageable groups, and thus some or all risks might fall into multiple domains (Carroll 2014). ASHRM identified a list of eight supported domains which represent common types of healthcare related risks. Operational, clinical, strategic, financial, human capital, legal, technology, and hazard are the eight domains. Carroll (2014) summarizes the risk domain as follows:

**Table 4 ASHRM healthcare risk domains**

|               |                                                                                                                                                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational   | Risks due to internal procedures, personnel, or systems that are insufficient or fail, and have an impact on organization operations.                                                                          |
| Clinical      | Risks connected with caring for residents, patients, and other healthcare clients.                                                                                                                             |
| Strategic     | Risks associated with organization identity, vision, priorities, reputation, competitiveness, adaption, health reform and customer.                                                                            |
| Financial     | Risks related to decisions that affect the organization's financial sustainability, funding, or external financial assessments through partnerships, as well as income and expense scheduling and recognition. |
| Human Capital | Risks related to the staff, which is a key concern in today's workforce and economic markets.                                                                                                                  |
| Legal         | Risks associated with failure to identify, handle, and monitor legal, regulatory, and legislative demands on a local, and federal level.                                                                       |
| Technology    | Risks associated with technology, hardware, and devices, as well as procedures, systems, and organizational processes.                                                                                         |
| Hazard        | Risks associated with assets and their value, in the past has been connected with natural exposure and insurance, but today they increasingly encompass asset facilities as well such as parking.              |

In my opinion, ERM model when set should carefully consider the healthcare organization main risk domains and further understand education and culture of the organization to handle these

major risks and opportunities based upon vision, objectives, and market demand at that point of time.

Following the segregation of risk defined, the risk management professional should begin the assessment process by reviewing the risk list. Risk scales can be created for specific domains for the entire organization based on risk appetite using the most common ranking system of Likert scale, which ranges from one (1) to five (5) points. Martin (2020) explicates that risk tolerance and risk appetite have always been met with resistance in the healthcare industry. However, healthcare is a dangerous business by nature, and businesses must sometimes absorb risk that cannot be reduced, avoided, or transferred. It's impossible to set risk tolerance or risk appetite to zero. As a result, businesses must examine their operations and aims to assess the level of risk they are ready to accept to continue delivering essential services.

To continue the assessment process, a detailed document called a "risk inventory" is generated in which the risk domain with the greatest exposure is chosen and a risk score is developed, which should include a numerical estimate of the likelihood and impact. The possibility of a risk occurring is stated in the number of times it will occur, whereas the impact is the predicted effect of a risk if it occurs. The level of possible harm to a patient is sometimes referred to as impact in healthcare organizations (Carroll 2014). As a result, the risk score is calculated by multiplying the likelihood score by the impact score, which is then used to determine the ranking, thus each significant risk is assigned a risk score, which is then prioritized numerically.

Many risk management professionals will make a more comprehensive assessment of the top 20 to 25 risks that have the potential to affect strategy and the achievement of objectives after the risk

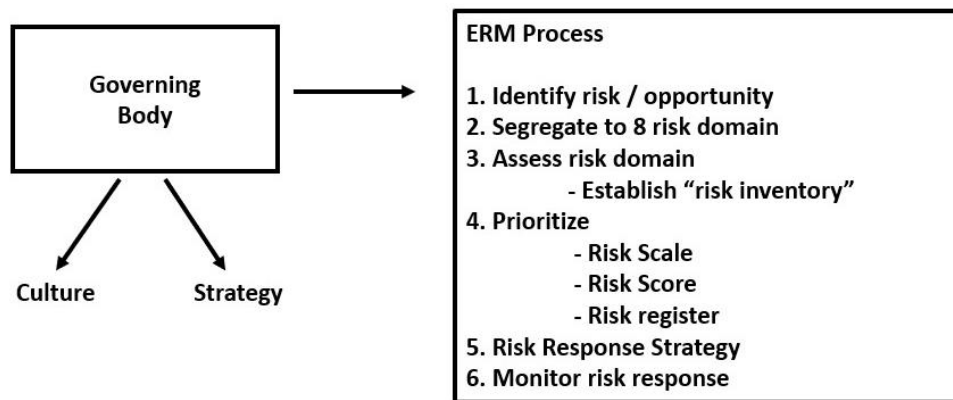
scores have been entered on the risk inventory tool and prioritized by order of significance or risk ranking. The risk register will be used to record the results of this additional analysis. Making effective and efficient use of the information included in these tools is critical since it will aid in the development of a suitable and unique ERM program for your company (Carroll 2014).

The next step is to act by building and implementing effective and efficient risk response plans after an organization has discovered, studied, and assessed the risks it faces and identified the potential for creating value. There is no single technique that can effectively manage all risks while still creating value. Several methods, including risk control and risk financing solutions, are required. Analyze, assess, and monitor the ERM program on a regular basis is the final phase in the risk management decision-making process. This step entails recognizing the value provided during the process and developing contingency measures in case risks arise (Carroll 2014).

On the other hand, when adverse and unforeseen situations arise, they respond and carry out containment plans to reduce organizational exposure. To achieve that, Orvik (2016) proposes that monitoring related actions that are of interest to shareholders and investors as part of executive management will allow ERM to be used in a value-focused manner in conjunction with financial and service efficiency. Throughout the strategic planning process, a mix of internal and external stakeholders, balanced with external review and involvement, is critical (Orvik 2016)

In practice, the frameworks chosen are frequently a product of an organization's vision or market demand in terms of what is needed to meet the organization's goals. However, All of the frameworks may be useful when starting, and they can all be merged to build the foundation of a customized, unique ERM framework (Almeida et al. 2019). Figure 2 summarizes governing body duties within the healthcare organization.

*Figure 2 Governing body duties within healthcare organization*



To summarize, according to Bruney and Salter (2014), the combination of ERM, corporate governance, and hospital strategic management is considered as the starting point for proactive management in health organizations with an emphasis on performance improvement.

## 2.6 Global perspective on ERM in healthcare

The World Health Organization (WHO) has interpreted the main concepts related to risk management in hospitals and proposed a hierarchical order of types of risk through the International Classification for Patient Safety (Etges et al. 2019).

The Joint Commission (JCI) on Accreditation has begun to consider risk management practices in accredited hospitals as part of its accreditation process. Other hospital regulatory organizations around the world have established guidelines with the goal of enforcing practices that will make risk management a routine for hospital executives. Some of these organizations are the Health Insurance Reciprocal of Canada (HIROC 2014), the American Society of Health Care Risk Managers (ASHRM 2006), and the National Health Service of the United Kingdom (NHS) (Etges et al. 2019)

It is no easy task to implement a good Enterprise Risk Management program in a healthcare setting, ERM is a risk-based approach to enterprise management that incorporates governance, assurance, and strategic planning concepts. Thus, a general overview is done in this chapter to further acquire best practices and its implementation worldwide.

The ERM in Ontario hospital, Canada has been studied by Martin (2020) in which the Health Insurance Reciprocal of Canada (HIROC) provides guidelines and roadmap for holistic implementation of ERM. In an Ontario hospital setting, the volunteered Board of Governors take responsibility of overseeing and regulating public hospitals in Ontario city, Canada. Further, they do withstand legally accountable for a variety of things, including the quality of patient care, credentialing of physicians, freedom of information decisions, and financial management with limited health resources (Martin 2020). These volunteered governors may have extensive experience in risk management and governance in other industries, however they have little experience working in the healthcare industry (Martin 2020).

To overcome lacking hospital setting experience, Martin (2020) explains the Ontario hospital strategy after a new Board member is elected, the management gives education and training specified for healthcare setting after a new Board member is elected. Furthermore, the Health Insurance Reciprocal of Canada (HIROC) recommends that governors' risk management education include training on healthcare risk management through regular Board education sessions, as well as ensuring at least once a year conceptual communication on healthcare risk management and emerging trends (Robison 2018). As a result of creating these requirements, healthcare organization governors will have the requisite skills and experience to oversee risk management. According to the Treasury Board of Canada Secretariat Organization, risk management training should be pushed to all personnel within the organization and included in individualized learning

plans, including plans for senior management and governors. However, due to limited learning resources in the healthcare sector, workers are only given training and opportunity for continual learning based on their individual interests and self-directed learning (Secretariat 2021).

Martin (2020) also discusses the advantages of teaching and training senior management, particularly risk management training, to guarantee that risk is adequately managed and communicated to the governors. In the event of uncertainty, this training will also assist employees understand that risk management encourages people to be proactive rather than reactive. Because of its proactive nature, it is more likely to establish and cultivate a receptive and risk-aware culture by teaching the organization's most responsible people about the importance of risk management and the role it can play in lowering operational costs, which will translate to increased institutional support over time (Martin 2020). Thus, as Martin (2020) claims, if an organization decides to take advantage of its governors and management training, it must build robust organizational ERM processes.

Further, Martin (2020) describes the ERM journey at The Ottawa Hospital (TOH) which began in 2009, when an ERM framework was implemented then revised its ERM program in 2014. TOH updated their ERM program in 2014 by defining a clear management-level strategy, a defined workplan with reporting, structuring basic, long-term goals, and implementing risk management principles into board reporting. Additionally, in 2017 the hospital implemented a risk register tool created by HIROC for use in the healthcare industry. To gain focus and influence the strategic planning process, TOH lowered the number of risks in half later in 2018, ensuring that each risk was matched with a strategic direction. The program's current maturity level was measured against ISO Standard 31000, and each Risk Owner defined Key Risk Indicators. By increasing appetite for and responsiveness to the ERM Program, the Hospital has only recently begun to cultivate the

benefits of its staff' enhanced education, awareness, and training. Risk owners are proactive in identifying current and emerging risks and providing mitigation options ahead of time. (Martin 2020).

Another illustration of ERM best practices worldwide is the national health service in UK. To comprehend the NHS, practice the St George's healthcare practice is examined. The United Kingdom's St George's Healthcare NHS Trust claims to have a robust risk management strategy in place, which includes defined processes for identifying, evaluating, managing, and monitoring risks, as well as divisional risk registers. However, based on a divisional governance review conducted in early 2014, comments from the Monitor evaluation process, and annual internal risk management audits, the company has opted to alter its strategy (National Health Service 2012). Additionally, Fenn & Egan (2012) highlights that risk management in NHS covers a wide range of clinical governance topics, including risk reporting and how to respond to complaints, auditing, guidelines, risk assessments, and training.

As a result, the goal of modifying the strategy is to reinforce the existing risk management framework by integrating risk management at the local level and ensuring appropriate escalation of risks to the Board of Directors across the organization using training and tools. This is based upon the ideas of Enterprise Risk Management (ERM) through which the goal is to include risk management into the organizations daily operations and to comprehend the wide range of risks it encounters so that they may be properly managed (National Health Service 2012).

ERM provides risk management from 'ward to board' in the context of an NHS trust. The main goals of change in strategy are to increase risk ownership at the local level, improve risk management roles and responsibilities, and strengthen governance arrangements to support the current framework (National Health Service 2012)

The six components of the strategy are: embedding risk management at all levels of the organization; creating a culture that supports risk management; providing risk management tools; providing risk management training; embedding trust risk appetite in decision making; and measuring the impact of implementation (National Health Service 2012)

A culture of risk management knowledge and understanding is required to achieve the six components of a successful and mature risk management framework. This means that roles and duties must be clearly defined so that risk management is "owned" by the right staff members, and employees must be encouraged to be more risk aware by encouraging openness and assisting them in managing risks locally wherever possible. It also includes the Board's visible and effective leadership in ensuring that risk management and escalation systems and processes are successful (National Health Service 2012)

A structured, organization-wide training program for staff is required to develop the necessary risk management culture and to ensure the successful implementation of this strategy. Training and awareness on risk management are currently available in a variety of formats. Risk management is discussed once a year as part of the board development program, and risk and governance are discussed in a variety of leadership development programs as well as ad hoc training. Card, Ward & Clarkson ( 2014), explicate that healthcare workers, who are working outside of their training of clinical education in risk management will not be successful unless they are given assistance in problem-solving as well as risk assessment and risk control as part of the risk management process. As a result, in the long run, it will be necessary to build a more structured risk management training program to support the strategy.

Additionally, it is critical for an enterprise risk management system to function properly if the language used to describe risks is consistent throughout the organization, as well as the format of

risk registers. The standardized platform for risk registers also provides an efficient escalation and de-escalation mechanism. All divisional risk registers are now on the “Health Assure” trust platform, with the goal of ensuring that all risk registers and the Board Assurance use “Health Assure” to provide a single, integrated risk register platform. A standardized register format will be used throughout the organization. Furthermore, risk registers will be implemented at a more local level within divisions, as well as at the Care Group and Directorate levels, with clear criteria and timeframes for risk escalation, as well as to further strengthen the role and membership of the Organizational Risk Committee (ORC) to ensure that it challenges risk management at the clinical divisional and corporate directorate levels, aggregates risks across those areas, and escalates risks (National Health Service 2012)

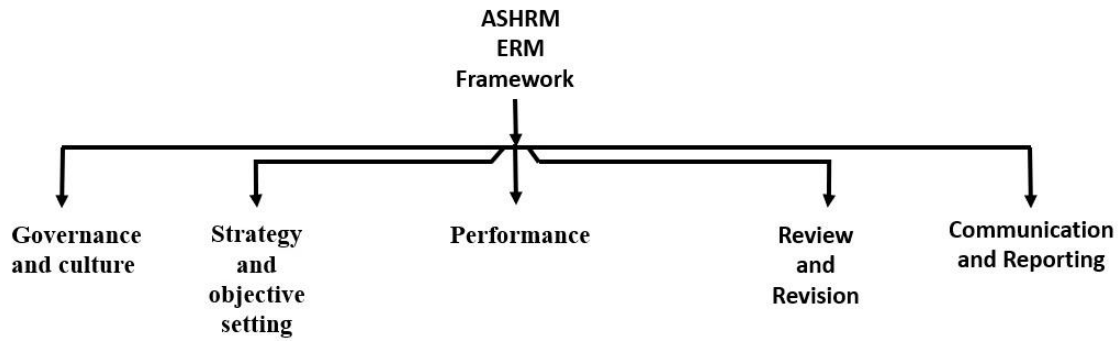
However, any enterprise risk management strategy must consider risk appetite, "The board is responsible for determining the nature and extent of significant risks it is willing to take in order to achieve its strategic decisions by developing a practical and pragmatic approach to risk appetite that improves decision-making quality by ensuring that decision-makers understand the risks associated with those decisions," according to the UK Corporate Governance Code (National Health Service 2012). Finally, it adopts the HM Treasury Risk Management Assessment Framework to examine the impact of adopting this plan to create yearly risk maturity assessments. This is a flexible tool for assessing performance and progress in the development and maintenance of good risk management.

To conclude, the NHS work toward establishing effective ERM practice is huge, as it acquires implementing ERM across the UK and England formulating a consistent language that can be understood to progress toward standardized risk management process and platform for risk register.

Going even further, consider the American experience with risk management in healthcare. The American Society for Healthcare Risk Management (ASHRM) is a non-profit organization dedicated to providing guidance and support for healthcare industry in United states of America. As ASHRM (2020) emphasizes the importance of a health-care organization's board of directors and senior leadership in setting the tone for adopting and sustaining a successful ERM program that allows the board to fulfill its governance and financial responsibilities. It also oversees an ERM program, determines the organization's risk appetite and tolerance, and monitors ERM implementation, all of which assist the board perform its duty of care and ensure that organizational resources are deployed effectively in service of the organization's mission. A well-developed ERM program aids the organization in risk assessment and management, through the assistance of all departments involved in the risk management process, resources are distributed based on this system-wide appraisal of risks and benefits, risk acceptance, and organizational development (ASHRM 2020). The ASHRM engages the COSO ERM in the healthcare organization and encompass its five main elements across all departments represented as governance and culture, strategy and objective setting, performance, review and revision, communication, and reporting. To summarize, governance and culture ensures that the Board of Directors is responsible for risk management, provides operating structures, defines desired culture, demonstrates commitment to core principles, and hires, develops, and retains capable employees. While analyzing the business context establishes insight to organization risk appetite, evaluate alternative strategies, and formulates business goals within strategy development plan. It further brings risk identifying, assessment, prioritizing to practice by defining healthcare specific domains preceded by strategic response and maintenance plans providing substantial changes, contingency plans, and improvement management. Through which this process is done with effective communication and

understanding of roles and responsibilities (COSO 2017). Figure 3 summarizes COSO (2017) utilized by ASHRM framework.

*Figure 3 COSO ERM in healthcare 2017*



These fundamental principles are listed by ASHRM (2020) to help board members understand several important aspects of risk management to embed them across the healthcare organization and influences the organization's decision-making, setting priorities, and developing strategies. ERM can add value by bringing about positive change, according to a recent survey of business executives, improvements and values are seen within several healthcare organizations by having lower borrowing and operational costs, Improved risk management and capital efficiency allowing better business judgments (ASHRM 2020).

To conclude, ASHRM utilizing of COSO ERM into healthcare and managing to develop domains specific to healthcare industry ensures organizational success in the face of rapidly changing health-care delivery. Thus, the ERM holistic approach support hospitals, health systems, and their boards better anticipate, recognize, and address the countless risks creating value and approaching opportunities.

To further complete the global perspective on enterprise risk management in healthcare, a glimpse of UAE, specifically Dubai's risk management of healthcare is studied during covid -19 pandemic. As literature lacks data regarding UAE particularly Dubai healthcare risk management in reference to ERM in healthcare, this paper addresses this gap.

Because the business climate in the United Arab Emirates (UAE) in general, and in Dubai in particular, is comparable to that of other countries around the world, and because Dubai pursued an outward-oriented strategy of openness to trade, trade facilitation, and a favorable business environment with rapid expansion of the services sector in the areas of health, tourism, finance, transportation, and communication, the UAE will eventually be vulnerable to the risks associated with globalization (Managers et al. 2007).

In the United Arab Emirates, health services are delivered through public-private partnerships that are overseen at both the federal and emirate levels. In the northern emirates, the Ministry of Health and Prevention (MOHAP), the Abu Dhabi Department of Health (DoH), and the Abu Dhabi Health Services Company (SEHA) are in charge, while the Dubai Health Authority (DHA) is in charge in Dubai. In addition, the UAE has established two specialized healthcare free zones: Dubai Healthcare City, which is governed by the Dubai Healthcare City Authority, and Sharjah Healthcare City, which is governed by the Sharjah Healthcare City Authority, with the goal of attracting international medical service providers to establish 100% institutional ownership structures and encouraging medical tourism (Moonesar, Elsholkamy & Syani 2018)

Aside from the healthcare industry, the UAE leadership's response and handling of the Covid-19 issue was directed by the Organization for Economic Co-operation and Development (OECD) crisis framework. The National Emergency, Crisis, and Disaster Management Authority (NCEMA), as well as the Command-and-Control Center, have the primary goal of governing and

coordinating all emergency and disaster management (CCC). To classify patients and prioritize treatment where it is most needed, the CCC works with the police, state security, ambulance services, the municipality, private health operators, healthcare academics, epidemiologists, and volunteers (Abbas Zaher et al. 2021).

According to the Strategic Crisis Management Framework of the Organization for Economic Cooperation and Development (OECD) it handles any crisis through a three-phase response plan. Crisis readiness, which includes efforts targeted at strengthening capacities that will aid in effective crisis anticipation, response, and recovery, is the first phase of the OECD's crisis response plan. Then, after the crisis has happened, it responds to minimize damage and, last, to provide clear feedback through feedback processes that examine, analyze, and draw lessons from the damage-mitigation steps done. As a result, each phase contains a set of criteria and methods that will be used to evaluate the UAE's progress in battling the Covid-19 pandemic on a national, regional, and global scale (Abbas Zaher et al. 2021)

While the UAE had created emergency response procedures, such a global pandemic was unexpected, and the country was as uninformed as the rest of the world. It was, however, its dynamic and proactive response that set it distinct, enabling for rapid system development and expansion once the disease threat was identified. As a result, the country was able to start and scale up response measures right once, allowing for large-scale testing, surveillance, clinical trial development, international collaboration, and vaccine distribution. According to the OECD crisis management framework, the first step in responding to an unexpected crisis is to quickly and effectively identify the source of the crisis, which often necessitates the use of scientific expertise to break down a complex situation into simpler scientific or technical components (Abbas Zaher et al. 2021). On January 29, 2020, the UAE's Ministry of Health and Prevention revealed the first

verified cases of Covid-19 in the Gulf region. The government stated two days later, on January 31st, 2020, that all suspected and confirmed cases of Covid-19 would be treated as emergencies, with all Covid-19 patients receiving free medical care (Alandijany, Faizo & Azhar 2020). Several successful and well-considered reaction actions and directives took place during the first three months of the UAE's response to the Covid-19 pandemic. It was marked by a variety of actions, ranging from school closures and aircraft cancellations to drive-through testing stations and countrywide sterilizing and cleaning processes. The OECD Strategic Crisis Management Framework also emphasizes the significance of efficient emergency response network management, stressing the need for key decision-making as the crisis progresses, as well as civil society participation, such as volunteer and non-governmental groups. Recognizing the importance of technology in limiting pandemic spread, the UAE moved quickly to implement telehealth and teleconsultation services. Further, To boost monitoring and tracing operations, NCEMA introduced “Al Hosn” UAE App in early 2020 for collective contact tracing of Covid-19 patients and others who come into contact with them (The Official Portal of the UAE Government 2021)

Further thought of a long-term eradication to reduce transmission and the current situation, effective vaccination is the only option for reduction of disease transmission. Vaccines have become the unanticipated superheroes of 2020 because of this unavoidable attention (How vaccines became the unexpected superheroes of 2020 - Al Arabiya English n.d.)

The UAE leadership was proactive in undertaking the first WHO-enlisted phase III clinical study of an inactivated vaccine against SARS-CoV-2 in the UAE, through a collaboration between Sinopharm's CNBG and Abu Dhabi-based Group 42 (World's First Phase III Clinical Trial of COVID-19 Inactivated Vaccine Begins in UAE - G42 n.d.).

Furthermore, the UAE leaders handled the crisis providing all countries resources and personally communicating with organizations, committees, and personal handling the crisis establishing a relationship of trust between the government and citizens.

Given that the Covid-19 pandemic is still ongoing at the time of writing, the situation must be adjusted and adapted till it is resolved, as the government encouraged citizens to return to normalcy. Following the official end of the crisis, all relevant authorities will perform an in-depth study and multi-level analysis of the country's reaction to the crisis. As a result, according to the GRID index, the UAE was among the top ten countries recognized internationally for its leadership and prompt action during the coronavirus disease outbreak (COVID-19 Pandemic Global Risk Management Response 2020). The UAE had one of the highest per-capita testing rates in the world by March 2020. It is the world's leading Covid-19 screening country, having done over 200,000 tests per 100,000 people. With more over 75 % of the population fully immunized, the country had one of the highest Covid-19 vaccination rates in the world (UAE: More than 75 per cent of the population fully vaccinated | Uae – Gulf News n.d.)

The Covid-19 pandemic has proven to be a significant pandemic that has put countries, populations, and those in charge of risk management and healthcare measures to the test. By coordinating an integrated effort across the country's different sectors, from government to healthcare, private to public sector, daily to emergency services, the UAE's leadership has set a new high standard for leadership and effective health management for countries throughout the world.

To summarize, UAE's success in handling Covid-19 pandemic is one to study and acknowledge its leader's governance in handling the crisis. The UAE readiness outlined in three phases strategy of crisis preparedness, response, and recovery before, during crisis as well as future initiatives to

get back to normality, will aid in effective crisis anticipation and recovery similar to effective ERM approach in an organization. Through which proactive actions and ownership are acquired before the crisis, ongoing to during crisis through initiating rapid responses and platforms and strategies to overcome threats and future business initiatives to improve economy. These can be approached only by a holistic approach by good governance of leaders and management, to overlook all threats and mitigate risks and create value, in which engagement is ongoing by communication, accountability and control.

## **2.7 Conclusion**

To conclude, the literature review investigated risk management timeline from defining risk and uncertainty and differentiating between them, then exploring frameworks and management of risk and its change in approach from traditional siloed to holistic enterprise risk management. It went further and explored different ERM frameworks through a comparative approach. To end the chapter, it studied global approach on ERM in healthcare. Thus, the literature review provided in this chapter about ERM and ERM in healthcare practices globally serves as bases for implementing effective ERM framework through examining different organization factors that influence it. Furthermore, these organizational factors acted as independent variables in the conceptual framework of the study that influence dependent variable of effective ERM.

## Chapter 3: Research Methodology

### 3.1 Introduction

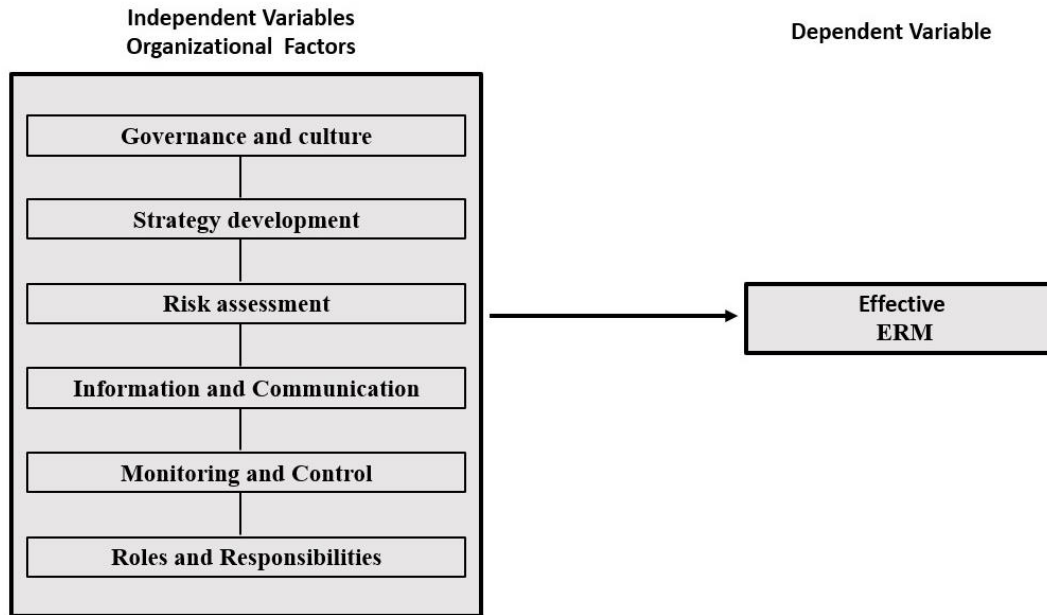
In this study, quantitative methodology was used to test what was stated in the literature above about ERM in healthcare organizations. It was done through conducting a survey questionnaire using google forms. This chapter outlines the conceptual framework and study factors on which hypotheses were set. The sample data for the questionnaire is then described further, followed by an explanation of the methodology and SPSS analysis.

### 3.2 Conceptual framework and study variables

A conceptual model is proposed and tested empirically through statistical analysis. The unit of analysis of the study is individuals, so data is collected from employees in healthcare organization specifically, Tashafi clinics by Al-Futtaim in Dubai

Figure 4 illustrates a conceptual framework for enterprise risk management (ERM) and its effectiveness. The governance and culture; Strategy development; Risk assessment; Information and communication; Roles and responsibilities and Monitoring and control, are all independent variables (IV), while the effectiveness of enterprise risk management is the dependent variable (DV).

**Figure 4 Conceptual Framework**



As obtained from COSO (2017), The following six components of an effective ERM to support the fulfillment of an entity's mission, strategies, and related business objectives. The six main organizational factors influencing implementation of effective ERM are, governance and culture as it is a system of rules, procedures, and structures that serve as the foundation for applying internal control throughout an organization. From the top down, the board of directors and senior management set the tone for the importance of internal control and anticipated behavior. Second is strategy development through which the board of directors and management must decide whether the strategy aligns with the business's risk appetite, as well as how it will help the organization define goals and allocate resources efficiently. The third component is risk assessment, which is a dynamic and iterative process for identifying and analyzing risks to the organization's objectives and resolving how risks should be managed.

Management assesses prospective changes in the external environment as well as organization's internal model changes that could block its capacity to achieve its objectives. Internal and external communication provide the information that the organization needs to carry out its everyday duties. Roles and responsibilities when identified specially of chief risk officer and team to allow communication, accountability, and achievement of objectives. The monitoring factor necessitates continuous and independent evaluations, or a mix of the two, to evaluate whether each of the organizational variables, including controls to influence the principles within each component, is present and operating. Major difficulties are reported to upper management and the board of directors. Findings are analyzed and limitations are discussed promptly.

The paper hypothesizes the following to address the study's objectives and based on previous research, studies, theories, and literature review above, the following hypotheses are proposed:

H1: There is a strong link between ERM effectiveness and governance and culture in healthcare organizations

H2: There is a strong link between strategy development and ERM effectiveness in the healthcare organization.

H3: There is high relation between ongoing risk assessment and effective ERM

H4: There is a direct link between supported communication and information sharing on establishing effective ERM in healthcare organization

H5: There is direct connection between organization controls and monitoring and effective ERM in healthcare organization

H6: There is a strong relationship when having set roles and responsibilities for risk management and effective ERM in healthcare organization

### **3.3 Sample and data collection**

The author used a quantitative approach to investigate the factors that influence the effectiveness of Enterprise Risk Management in Tashafi clinics by AL-Futtaim in Dubai as healthcare group in Dubai. Respondents were asked to fill out the questionnaire online using google form. The respondents were asked questions about the organizational factors that contributed to the implementation of effective ERM in the organization including the governance and culture in their organization; Strategy development plans; ongoing Risk assessment; the communication and information sharing in the organization; Roles and responsibilities of risk management team and Monitoring and control within the organization. The questionnaire was adapted from the COSO 2017 framework governing the principles of effective risk management to measure the dependent variables. The effectiveness of ERM was measured using a 5-Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

### **3.4 Methodology**

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 survey instrument “google form” was used to obtain data showing agreement or disagreement about six organizational factors that influence implementation of effective ERM. The survey included 150 employees in Tashafi clinics by Al-Futtaim in Dubai. To give a better representation of Tashafi healthcare group, the sampling frame was based on random sampling. The survey was sent to 150 employees including, the Board of Directors (BOD), Senior Management, Middle Management, Junior risk Management were all asked to complete the questionnaire. The questionnaire was administered online using google forms for respondents to partake. Even though the target sample size was 150, only 100 Responses of 150 were considered, 50 were not considered due to neutral or extreme responses, thus 100 responses used, the questionnaire has sample of 100 respondents representing a 75% which is reasonable for a valid generalization. The variables reflecting the level of adoption of ERM and other factors in organization were measured using a 5-likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Further, data were imported to SPSS software for further analysis to detect statistical relationship between independent and dependent variables. To conclude the methodology chapter outlined and explained conceptual framework, sample data and used survey questionnaire to further comprehend and analyze independent and dependent variables.

## Chapter 4: Data Analysis

### 4.1 Introduction

The statistical package for social sciences (SPSS), version 27 was used to analyze the data collected. The questionnaire was administered online using google forms for respondents to partake.

The analysis approach was consistent with literature review discussed earlier about organizational factors that could influence implementation of effective ERM. The analysis included descriptive analysis incorporating mean, standard deviation, frequencies. To validate the hypotheses of the study in relation to the research questions. Further the t-test and correlation were constructed, whereas a one-sample test was used to rank the influence of the multiple factors within organization on the ERM effectiveness. The organizational factors include governance and culture; strategy development; risk assessment; monitoring and control; communication and information and roles and responsibilities. The Spearman correlation was employed to measure the correlation between these factors within organization of study (Tashafi clinics by Al-Futtaim in Dubai) and the effectiveness of the ERM in this study.

## 4.2 Results

The results obtained from SPSS analysis provide the following:

*Table 5 Cronbach Alpha*

| Reliability Statistics |            |
|------------------------|------------|
| Cronbach's Alpha       | N of Items |
| .941                   | 18         |

Prior to analysis, the scores of questionnaires which included a sample of 100 were included and excluded neutral and extreme responses to analyze internal consistency and reliability. Cronbach's alpha is a metric for determining the internal consistency, or reliability, of a set to test items. In other words, a measurement's reliability refers to how constant it is in measuring the variables and Cronbach's alpha is one means of determining how strong that consistency is. The Cronbach's alpha is calculated by comparing the variance of all individual item scores to the total score for each individual survey respondent.

By referring to the above Table 5 shows Cronbach's alpha value, it is found to be close to 94.1% which in this case, these values are considered to be reliable, and showed a high internal consistency.

**Table 6 Average views of effectiveness of ERM**

| Variable                  | N   | Mean   | Std. Deviation | Tested Value | t      | P-value |
|---------------------------|-----|--------|----------------|--------------|--------|---------|
| Effective risk management | 100 | 3.5433 | .28976         | 3            | 18.751 | .001    |

Referring to Table 6, it demonstrates the average views of the respondents about the relation of implementation of organizational factors and effectiveness of ERM. The mean value of 3.5433 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 interprets that the result is in proportion with the study that there is a relationship between organizational factors and their influence of implementation of effective ERM.

**Table 7 Correlation analysis of each independent variable with dependent variable**

| Variable                      | Correlation | P-Value | Relation |
|-------------------------------|-------------|---------|----------|
| Governance and Culture        | .952        | 0.001   | Positive |
| Strategy Development          | .952        | 0.001   | Positive |
| Risk Assessments              | .242        | 0.001   | Positive |
| Information and Communication | .265        | 0.001   | Positive |
| Monitoring and Control        | .819        | 0.001   | Positive |
| Roles and Responsibilities    | .152        | 0.001   | Positive |

Table 7 shows that Spearman correlation coefficient between six organizational factors representing independent variables and their influence of implementation of effective ERM. The spearman correlation coefficient presented that, Governance and culture is 95.2% which is significant ( $P < 0.05$ ) indicating a high positive correlation. Similarly, Strategy development is 95.2% which is significant ( $P < 0.05$ ) indicating a high positive correlation. Further, correlation coefficient between Monitoring & control and effective ERM is at 81.9% and represents high positive correlation as well.

On the other hand, Correlation coefficient of Information & communication has positive correlation at 26.5% and risk assessment at 24.2 %, presenting a low correlation to effective ERM compared to governance & culture, and strategy development. Also, there is a positive correlation between Roles & responsibilities within organization and effective ERM with a correlation coefficient of 15.2% and it is statistically significant ( $P < 0.005$ ). Roles & responsibilities present the lowest correlation with dependent variable of effective ERM.

**Table 8 Influence of variables on ERM**

| Variables                   | Questions                                                                                                                                                                                                                    | Mean | Std. Deviation | t-Value | Decision  |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------|---------|-----------|
| Governance and culture      | The Board of Directors establishes, maintains, and evaluates the skills and expertise required of its employees to contribute to decision - making and closely examine management's actions and present alternative opinions | 4.74 | 0.44084        | 39.47   | Very High |
| Governance and culture      | Periodic training is held by the organization to ensure that employees are aware of their organizational governance responsibilities and risk management and is constantly reevaluated.                                      | 4.74 | 0.44084        | 39.47   | Very High |
| Strategy development        | The organization policies have strategic plans set to explicit risk tolerance levels for all major risk categories across the company                                                                                        | 4.74 | 0.44084        | 39.47   | Very High |
| Strategy development        | The organization had comprehensive contingency plan that was activated during covid-19 pandemic.                                                                                                                             | 1.15 | 0.35887        | -51.55  | Very Low  |
| Risk assessment             | The organization established organizational reporting controls during covid-19 pandemic and directly evaluated the risks failing to establish organizational objectives                                                      | 1.15 | 0.35887        | -51.55  | Very Low  |
| Risk assessment             | In the time of the covid-19 pandemic, the organization continues to overlook key emerging risks and their consequences and are evaluated and communicated to those responsible for corrective action.                        | 4.74 | 0.44084        | 39.47   | Very High |
| Information & communication | The organization provides ongoing communication and updated information to maintain informed employees about current policies and protocols during the covid-19 pandemic.                                                    | 4.74 | 0.44084        | 39.47   | Very High |
| Information & communication | The organization has a wide common language for communicating risk type exposure and control.                                                                                                                                | 1.15 | 0.35887        | -51.55  | Very Low  |
| Monitoring & control        | The organization regularly evaluate strategy, operational and financial management to support organizational vision, mission, and objectives within context of global change during covid-19 pandemic                        | 4.74 | 0.44084        | 39.47   | Very High |
| Monitoring & control        | The organization has a system in place to collect and analyze data gathered through monitoring activities                                                                                                                    | 4.74 | 0.44084        | 39.47   | Very High |
| Roles & Responsibilities    | Chief risk officer has a process for integrating major risk types (strategic, operational, financial, legal, hazard) during covid-19 pandemic.                                                                               | 1.15 | 0.35887        | -51.55  | Very Low  |
| Roles & Responsibilities    | Risk managers have regular briefs to the board, the committees and employees on risk management issues and work together to identify and report.                                                                             | 1.15 | 0.35887        | -51.55  | Very Low  |

Table 8 shows that there is a mix of agreement of respondents with average of 4.74 and standard deviation of 0.45 whereas on the other hand the factors with low agreement presented an average of 1.15 with standard deviation of 0.35.

ERM needs to be integrated and centralized risk management with appropriate measures in the organization. The t-test revealed that the results are statistically significant, indicating that there is a very high agreement of the respondents and in some instance very low agreement of the respondents. To further analyze data regression was done to determine impact of each organizational factor on dependent variable of effective ERM. Based upon correlation results the organizational factors with high positive correlation are, governance & culture, Strategy

development and Monitoring & control. Thus, to study their impact further these three independent variables data were analyzed further using regression analysis model.

**Table 9 Regression Analysis Model: Effect of Governance and Culture, Strategy Development and Monitoring and ERM as Dependent variable**

| <b>Regression Model</b>                                                                        | <b><math>\beta_1</math></b> | <b>S.E(<math>\beta</math>)</b> | <b>T-stats<br/>(P-Value)</b> |
|------------------------------------------------------------------------------------------------|-----------------------------|--------------------------------|------------------------------|
| <b>Constant (or Intercept)</b>                                                                 | 4.21                        | 0.386                          | <b>8.81(.000)</b>            |
| <b>Governance and Culture</b>                                                                  | .333                        | 0.413                          | <b>1.14(.035)</b>            |
| <b>Strategy Development</b>                                                                    | .667                        | 0.692                          | <b>2.07(.039)</b>            |
| <b>Monitoring and Control</b>                                                                  | .237                        | 0.001                          | <b>0.307(.015)</b>           |
| <b>R<sup>2</sup> = .703</b><br><br><b>F – statistics = 7.01</b><br><br><b>P – Value = .000</b> |                             |                                |                              |

From the regression analysis results presented in Table 9, the study finds that three significant organizational factors present independent variables explain the variation in the composite score of the effectiveness of ERM. Additionally, R-square is high ( $r^2 = .703$ ), indicating there is about 70% of variation in the effectiveness of ERM composite score that has been explained by the three organizational factors (governance & culture, strategy development, monitoring & control) in the model. Also,  $p$  is less than 0.05, and indicates that overall, the regression model statistically significantly.

### 4.3 Conclusion

To conclude, analytical processes were conducted using SPSS to test hypothesis of the study. Results provided using spearman correlation coefficient between dependent and independent variables revealed positive correlation in different values. Governance & culture, strategy development show very high positive correlation, monitoring and control show high positive correlation. In contrast, information & communication, and risk assessment has low positive correlation, while roles & responsibilities present the lowest positive correlation. Furthermore, mix of agreement of respondent's is presented when looking at the mean and standard deviation values. The t-value revealed that data is statistically significant with different values representing different agreements to each question in the survey of each independent variable. To further study the impact of each high correlation independent variable (governance & culture, strategy development, monitoring & control) in relation to dependent variable the data regression is done using linear regression. The regression provided high R-square, also  $p$  value is less than 0.05, and indicates that the overall regression model is statistically significantly.

## Chapter 5: Discussion

### 5.1 Introduction

ERM frameworks has become increasingly relevant in variety of sectors due to its ability to create value and opportunities. Recently during Covid-19, healthcare sector realized importance of ERM to be embedded in reference to reserve patient safety and quality healthcare to overcome uncertainty and provide effective management. However, this requires multiple organizational factors that contributes to implementing effective ERM to gain advantages of ERM framework. This research highlighted different risk management frameworks, global healthcare practices in healthcare and provided data from literature to investigate organizational factors that contribute and influence effective ERM implementation. This resulted in six organizational factors that include governance and culture, strategy development, risk assessment, monitoring and control, information and communication, roles, and responsibilities. To test these a quantitative methodology was conducted through a survey questionnaire given to one of the healthcare organizations in Dubai. The results outlined contribution of these factors to effective implementation of ERM and test hypotheses.

### 5.2 Data discussion

To interpret data, internal consistency and reliability are examined through using the scores of 100 questionnaires and neutral and extreme responses were discarded prior to analysis.

Based on value in Table 5, the Cronbach's alpha value is found to be close to 0.941 , indicating that these data variables are dependable and have a high reliability and validity stating the high consistency and accuracy of the measure in this study.

Table 6 provided an average view of respondents about effectiveness of ERM based upon organizational factors as independent variable. The mean value of 3.5433 has been tested against a benchmark of 3.00 (this represents the neutral level in Likert scale), using one-sample t-test. The result of 18.751 indicated that the difference is statistically significant at 5% ( $P < 0.05$ ). This presents that there is a relationship between organizational factors in general and effective ERM implementation. Thus, presenting the reply to question three in research questions discussed above about organizational factors that contribute to establishing effective ERM implementation in healthcare organization.

Later, correlation tests have been generated for each organizational factor against dependent variable of effective ERM. Spearman correlation coefficient is done to determine strength and direction of association between each of organizational factors and effective ERM. Table 7 shows that Spearman correlation coefficient between influence of Governance and culture, and strategy development on implementation of effective ERM, both presented a high positive correlation of 95.2%. While monitoring and control also presented a high positive correlation coefficient of 81.9%.

On the contrary, correlation coefficient of Information & communication and effective ERM is positive low at 26.5%. Similarly, Risk assessment have correlation coefficient at 24.2%. Furthermore, Roles and responsibilities presented the least correlation coefficient at 15.2% which represents a positive but low relation to effectiveness ERM in the organization of study.

To explain Table 7 further, the organizational factors presented in this study presenting the independent variable are governance & culture, strategy development, risk assessment, information & communication, monitoring & control, roles & responsibilities, all have positive correlation to the dependent variable of influencing implementation of effective ERM. This further indicates that presence of these organizational factors is a must to have effective ERM implementation in the healthcare organization specially during Covid-19 pandemic. As correlation coefficient presented that some organizational factors have higher correlation as (governance & culture, strategy development, monitoring & control) thus organizations need to contribute more to influence those factors and embed them in the enterprise strategy.

To further study in detail the relation of each organizational factor and extent in relation to effective ERM. Table 8 states the influence of these independent variables on ERM. As each variable is represented in two questions, and dependent variable represented by a question in each variable. The results provided from each question is interpreted by getting mean, standard deviation and t-value. In general, the results show a mix of agreement and disagreement of influence of organizational factors on ERM effectiveness, the mean averaged between high 4.74 and low 1.15. Governance and culture variable, as well as monitoring and control variable had high mean in both of their questions indicated its high influence on effective ERM in the study organization.

While roles and responsibilities two questions presented low mean indicating low influence of this factor on organization ERM effectiveness. On the other hand, strategy development, risk assessment, and information & communication show mix of low and high mean indicating mix interpretation of their influence on ERM effectiveness during covid-19. To further interpret Table 8, t-values are obtained to determine agreement to hypothesis of this study. The t-value provided 39.47, this high positive value indicates agreement of the factor to hypotheses.

Thus, governance & culture, monitoring & control show positive high value of 39.47 which indicated high agreement of these factors to effective ERM, validating hypotheses one and five. Hypotheses one states that there is strong link between ERM effectiveness and governance and culture in healthcare organizations. As governance & culture is presented by the questions; The Board of directors effectively and efficiently governs the organization's risks during covid-19 pandemic and implemented internal controls to mitigate those risks and quantify key risks to the maximum; Periodic training is held by the organization to ensure that employees are aware of their organizational governance responsibilities and risk management and is constantly reevaluated. Thus, through these questions we can interpret importance of governance and creating risk management culture through continuous training and embedding risk management programs. This interpretation comes in proportion to literature according to Martin (2020), if a business intends to use its governors and management training, it then develops effective organizational ERM processes. Also, Miller, Miginsky & Connelly (2012) highlighted the need to underline the importance of employee participation in the hospital's organization as well as the requirement for staff to be trained and informed about ERM. Similarly, Bruney and Salter (2014) stated that to establish ERM corporate culture, it requires anticipating professional education to all employees to further initiate enterprise risk management.

This study validated as well proposed hypotheses five that there is direct connection between organization controls and monitoring and effective ERM in healthcare organization. The questions were the following: The organization regularly evaluate strategy, operational and financial management to support organizational vision, mission, and objectives within context of global change during covid-19 pandemic; The organization has a system in place to collect and analyze data gathered through monitoring activities. The high agreement to these two questions indicates

that effective ERM is implemented when regular evaluation of all domains of healthcare organization is done as well as constant evaluation of policies and procedures accordingly with the internal controls in response to rapid changes during pandemic. This constant monitoring and control maintain adoption of objectives and vision of the healthcare organization during pandemic. As a result, this comes in parallel with the literature stated by Orvik (2016) which proposed that monitoring related actions that are of interest to shareholders and investors as part of executive management will allow effective ERM to be implemented and used in a value-focused manner.

Further strategy development, risk assessment and information & communication show mixed agreement to their hypotheses as one question of each variable has positive very high value of 39.47 and other question of each variable has negative very low value of -51.55.

Thus, question one of strategy development; The organization policies have strategic plans set to explicit risk tolerance levels for all major risk categories across the company. The high agreement to this question provides insight of awareness of the employees in the study organization to acceptable level of risk to be taken. This comes in proportion to National health service (2012) approach in which they claim that effective ERM is accomplished when employees are encouraged to be more risk aware locally wherever possible, further The Ottawa Hospital lowered their number of risks in half later in 2018 by enhancing risk awareness between their employees.

While strategy development question two; The organization had comprehensive contingency plan that was activated during covid-19 pandemic, had very low agreement concluding that the organization have not comprehensive preparedness for the pandemic. As DeMaio et al. (1994) presents that to respond to proactive strategy it requires to start preparing contingency planning, or a proactive or feed forward approach before an uncertain event occurs.

Moreover, risk assessment question one; The organization established organizational reporting controls during covid-19 pandemic and directly evaluated the risks failing to establish organizational objectives, had low agreement concluding that lack of continuous reporting during covid-19 had definitely an impact on organizations as Carroll ( 2014) interprets that to ensure effective ERM program deployment, there should be routine status reports on regular basis to oversight progress, monitor quality outcomes, performance, and employee satisfaction.

While question two in risk assessment, In the time of the covid-19 pandemic, the organization continues to overlook key emerging risks and their consequences and are evaluated and communicated to those responsible for corrective action. The Responses showed high agreement to this suggesting continuous overlooking of the study organization to emerging risk as their level of impact is unknown and therefore ensuring effective ERM is undertaken. This was previously stated in literature by Martin (2020) that in the event of uncertainty, the embedded governance and risk management culture in the organization will assist employees to understand risk management and encourages proactive rather than reactive acts. Also, Bruney and Salter (2014) stated that combination of ERM, corporate governance, and hospital strategic management is considered as the starting point for proactive management in health organizations with an emphasis on performance improvement.

Further information & communication question one, the organization provides ongoing communication and updated information to maintain informed employees about current policies and protocols during the covid-19 pandemic. The high agreement to ongoing communication, monitoring key risks and strategic plans set to explicit tolerance level provides outline of good ERM implementation that considers holistic approach of all aspects of the organization through good communication and monitoring and therefore will ensure business continuity and decrease

negative impact of pandemic. As Bromiley et al. (2015) emphasized that making good changes in the ERM environment as well as the risk management team should also include a strong element of teamwork and communication in order to improve ERM.

While information & communication question two, The organization has a wide common language for communicating risk type exposure and control. The low agreement to this providing common language undelines a basic need to influence communication language in the study organization, this could be achieved by improving risk management education through training on healthcare risk management and regular Board education sessions, as well as ensuring at least once a year conceptual communication on healthcare risk management and emerging trends as suggested by Robison (2018).

Nevertheless, roles and responsibilities presented in its two questions show low agreement. Question one Chief risk officer has a process for integrating major risk types (strategic, operational, financial, legal, hazard) during covid-19 pandemic, Risk manager have regular briefs to the board, the committees and employees on risk management issues and work together to identify and report. This low agreement indicates decreased role of CRO in the organization, suggesting improving role of CRO in the organization of study to maximize holistic enterprise approach to risks during pandemic. As Bromiley et al. (2015) emphasized that the CRO's duty is to work with managers to come up with effective risk management strategies. Also, further explains that successful CRO aids in making improvements in the effect of working and suitable management of ERM activities in the organization. Similarly, Papadaki et al. (2014) points out that when the risk manager works as the focal point within the portfolio, programs, projects, and the rest of the organization might accomplish effective ERM. Further, the risk manager serves as a link between the various levels of the organization, ensuring that strategic objectives are

effectively translated, communicated, and implemented. As further Papadaki et al. (2014) demonstrated through survey questionnaire that the majority of respondents (67.6%) agreed or strongly agreed with the requirement for a specialized risk manager.

Based upon the analysis and discussion, hypotheses two, three and four have mixed agreement and positive correlation, stating that there is mixed agreement of that there is a strong link between strategy development and ERM effectiveness in the healthcare organization, There is high relation between ongoing risk assessment and effective ERM and mixed agreement that there is a direct link between supported communication and information sharing on establishing effective ERM in healthcare organization and low agreement and low correlation to hypotheses six stating There is a strong relationship when having roles and responsibilities for risk management and effective ERM in healthcare organization.

Going further with the analysis, linear regression is the next step to be done to define the impact of each independent variable on dependent variable. As only these three organizational factors presented high correlation were taken for this analysis and other three independent organizational factors (risk assessment, information and communication, roles and responsibilities) were excluded. Table 9 represents Regression Analysis Model: Effect of Governance and Culture, Strategy Development and Monitoring and ERM as Dependent variable. Thus, linear regression was performed with the three independent variables of Governance and culture, Strategy Development, Monitoring and Control to dependent variable of Effective ERM and define impact of each independent variable on dependent variable, and results from Table 9 shows R-square value is high with a value of  $r^2 = .700$ . This concludes that 70% of the variance in the effectiveness of ERM composite score that has been explained by the three organizational factors (governance

& culture, strategy development, monitoring & control) in the model. Also,  $p$  is less than 0.05, and indicates that overall, the regression model is statistically significantly.

### **5.3 Conclusion**

To conclude, the organizational factor of governance & culture, monitoring & control show high agreement of these factors to effective ERM, validating hypotheses one and five. Hypotheses one states that there is strong link between ERM effectiveness and governance and culture in healthcare organizations. Hypotheses five states that there is direct connection between organization controls and monitoring and effective ERM in healthcare organization. On the contrary, hypotheses two, three and four have mixed agreement and positive correlation, stating that there is mixed agreement of that there is a strong link between strategy development and ERM effectiveness in the healthcare organization, there is high relation between ongoing risk assessment and effective ERM and mixed agreement that there is a direct link between supported communication and information sharing on establishing effective ERM in healthcare organization. Further, low agreement and low correlation in relation to hypotheses six stating There is a strong relationship when having roles and responsibilities for risk management and effective ERM in healthcare organization.

## Chapter 6: Theoretical and practical recommendations

Based upon literature review, methodology, analysis, and discussion the following recommendations are made to enrich and fulfill aim of this research is to explore organizational factors that have a direct impact on effective implementation of ERM in healthcare organizations.

Theoretical recommendations include studying healthcare sector ERM implementation Dubai in detail in risk management point of view and medical as well. And use several healthcare organizations, public and private, in the study instead of one. This will allow to have a holistic view of several organizational factors in different domains that contribute to effective ERM implementation. Additionally, investigate in depth the UAE ERM practices during Covid-19 in different industries and align main organizational elements and factors that contributed to UAE success story and list them to be as a document for lessons learned.

These two recommendations will enrich ERM frameworks in healthcare organization in Dubai providing a roadmap for sustainable ERM.

Further the following practical recommendations are suggested in light of the quantitative methodological results obtained in this study.

Focusing on and emphasizing the importance of risk governance and culture is a need for healthcare organizations to adopt effective ERM. This might be reinforced by ongoing training and education for all management workers, as well as good governance from the board of directors to ensure risk awareness and employee trust. This will enable an effective ERM to be implemented in a holistic manner, with all organization departments working together in cohesion.

The areas that demand attention and improvement based on the questionnaire outcomes is to provide a full-time CRO in the healthcare organization. The CRO will create a connectivity between different departments, as well as senior and junior management. This will help employees to communicate more effectively and build a wide common language and further a risk aware culture.

## Chapter 7: Conclusions and Recommendations for further research

The nature and types of hazards are changing as they emerge from ever-changing sources. To achieve effective ERM, organizations must enhance certain organizational factors in order to manage those risks and take proactive measures. To highlight this study main objectives were fulfilled through detailed literature review of different ERM framework, global implementation of ERM in healthcare. This concluded main organizational factors that contributed to establishing effective ERM implementation in healthcare organization, then were further analyzed to provide a framework of the main factors that will link to the effective implementation of ERM in Healthcare organizations. At the end this study provided recommendation for the effective practical and theoretical implementation of effective ERM in healthcare organization. To summarize, this research achieved its goal of identifying key organizational characteristics that influence the effective adoption of ERM in healthcare organizations.

As Organizations with effective ERM can withstand global shifts, particularly during pandemics like covid-19. The organizational factors that led to effective ERM are governance and culture, monitoring and control, while other organizational factors; risk assessment, information & communication, strategy development, roles and responsibilities have low correlation and mixed agreement of respondents in the study organization.

This suggest improving these factors to enhance ERM of the organization and be in parallel with organization vision and objective during pandemic along with the global and market situation. Healthcare organizations must incorporate effective ERM while also considering patient safety and the organization's delivery of efficient, high-quality treatment.

This research contributes to knowledge as it is from the first that study ERM in UAE healthcare organization and thus will be considered to be an essential step towards effective enterprise risk management in healthcare. However, as with any piece of academic research, there are several suggestions for further studies, concerning both the methodology and applications. They are:

- It would be interesting to repeat this study with a larger sample size of healthcare organizations to obtain further evidence in support of the proposed approach of organizational factors and indicate how it can be modified.
- ERM models have been used in other healthcare organizations globally, the researches should include Dubai specifically healthcare organizations in the market to be part of further research and study, to investigate common organizational factors that contribute to effective ERM, as well as create a team of diverse interests and departments and get their feedback, and then propose an ERM model specifically for healthcare organizations in Dubai to be incorporated to all healthcare organizations to allow equal audit and governance for all healthcare organizations.
- As ERM is becoming a major concern to improve risk management specially in healthcare industry thus, it would be worthy to see more academic work about this subject addressing UAE healthcare ERM implementation and other gulf countries.

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## Appendix

The following is a copy of the distributed questionnaire used for this study purposes.

**Governance and culture**

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

1. The Board of Directors establishes, maintains, and evaluates the skills and expertise required of its employees to contribute to decision -making and closely examine management's actions and present alternative opinions.

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

2. Periodic training is held by the organization to ensure that employees are aware of their organizational governance responsibilities and risk management and is constantly reevaluated.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. The Board of directors effectively and efficiently governs the organization's risks during covid-19 pandemic and implemented internal controls to mitigate those risks and quantify key risks to the maximum.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

### Strategy development

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

1. The organization policies has strategic plans set to explicit risk tolerance levels for all major risk categories across the company

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

2. The organization follows established policies and practices, which include checking new prospective references globally and previous experiences during covid-19 pandemic.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. The organization had comprehensive contingency plan that was activated during covid-19 pandemic.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

## Risk assessment

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

1. The organization risk identification and assessment process are comprehensive, encompassing all significant interactions throughout the organization, as well as outsourced providers.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

2. The organization established organizational reporting controls during covid-19 pandemic and directly evaluated the risks failing to establish organizational

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. In the time of the covid-19 pandemic, the organization continues to overlook key emerging risks and their consequences and are evaluated and communicated to those responsible for corrective action.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

## Information and Communication

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

☐ Option 1

1. The organization provides ongoing communication and updated information to maintain informed employees about current policies and protocols during the covid-19 pandemic.

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

2. The organization structure and culture aid in establishing and enforcing employee accountability for organizational responsibilities, as well as communication and significantly support decision making process.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. The organization has a wide common language for communicating risk type exposure and control.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

## Monitoring and Control

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

1. The organization regularly evaluate strategy, operational and financial management to support organizational vision, mission, and objectives within context of global change during covid-19 pandemic.

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

2. The organization has a system in place to collect and analyze data gathered through monitoring activities.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. The organization board of directors and audit committee keeps in touch with the different department's auditors and internal monitors on a regular basis during emergence of covid-19 pandemic.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

## Roles and Responsibilities

Response Key : 5- Strongly Agree 4- Agree 3 - Neither Agree nor Disagree 2- Disagree 1- Strongly Disagree

1. Chief risk officer has a process for integrating major risk types (strategic, operational, financial, legal, hazard) during covid-19 pandemic.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

2. The risk management team includes full time risk manager and employees from different departments.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

3. Risk manager have regular briefs to the board, the committees and employees on risk management issues and work together to identify and report.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5