

UNIVERSITY OF BAHRAIN

College of Business
Administration



Department of Management
& Marketing

Towards understanding The Impact of Knowledge Management Processes on Dynamic Managerial capabilities in STC Bahrain

A Thesis Submitted in Partial Fulfilment of the Requirements for M.Sc.
in Human Resource Management

Submitted by:
Maryam J Salem
20044899

Supervised by:
Dr. Asma Ayari
Associate Professor
University of Bahrain

Kingdom of Bahrain
September 2023

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Thesis Discussion Committee Decision

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Department: Management & Marketing	College: Business administration
Program: Masters in Human Resource Management	
Thesis Title: The impact of Knowledge Management on Dynamic Managerial capabilities in the Telecommunication Sector in Bahrain. The Case of STC Bahrain	
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The Discussion Committee met on 18-Apr-23 In College of Business Administration. Upon discussing the student whose details are stated above in public, the discussion committee recommends the following:

The student is awarded a grade ~~Pass~~ **Pass** item. in the thesis subject.

☐ Without making any changes to the thesis.

☒ After making the modifications attached with this decision.

Discussion Committee Members Approval:

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Thesis Mark Distribution

The intellectual content of this thesis is the product of work and that all the assistance received in preparing this thesis and sources have been acknowledged. This work is an original in content.

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The total mark of the THESIS will be distributed as follows

Item	Mark
Thesis Report	70
Thesis Viva	30
Total	90 / 100

PART ONE: Thesis Report;

Students will be assessed for their thesis report on the basis of the following items:

Item	Mark
a. Abstract	5/5
Demonstration of a concise summary conveying the key items of the thesis.	
b. Introduction	10/10
Demonstration of a good explanation for the problem being considered in the thesis.	
c. Literature Review	10/10
Demonstration of an appropriate review for the relevant literature with the recent trends.	
d. Methods and Procedures	15/15
Demonstration of a good description for the data used.	
Demonstration of understanding for the methods and procedures implemented.	
e. Results, Discussion, Conclusions and Recommendations	10/15
Demonstration of an appropriate of the thesis results.	
Demonstration of the reasonable discussion for the results and their implications.	
Demonstration of summarizing thesis findings and extracting possible recommendations.	
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j. Methodology	
Demonstration of understanding for the details and reasoning of the implemented methodology.	5
k. Results Summary	
Summarization of the results appropriately.	5
l. Results Implications	
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Advisor	Asmaa Agui	[Signature]	18 April 2023
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Above 80%	- Pass without corrections. - Pass with minor corrections. - Pass with major corrections, requires resubmission but no further oral examination. - Pass with major corrections, requires resubmission and a second oral examination. - Pass subject to doing further research, resubmission and a further oral examination.
Below 80%	Fail

Abstract

Purpose: This research aims to evaluate the impact of knowledge management processes that include (knowledge acquisition- knowledge storage- knowledge sharing- knowledge implementation) on dynamic managerial capabilities in STC Bahrain.

Design/Methodology: The quantitative methodology is used to fulfil this research in addition to the descriptive design. The research used the convenience sampling technique. The sample included 192 employees in STC Bahrain. Data was collected by a survey that included 40 items. The collected data was analyzed by SPSS version 28. The data was analyzed through some statistical tests as descriptive statistical tests and inferential data analysis.

Findings: It is concluded that there is a significant impact of knowledge Management processes on dynamic managerial capabilities. Also, there is a significant difference in perception of the impact of knowledge management on dynamic managerial capabilities in STC Bahrain attributed to the demographic variable (Gender-age- job-years of experience- education level- nationality).

The research recommends that managers exert more efforts to learn and develop within the context of their organizations and outside these organizations. They do post graduate studies in order to acquire more knowledge in their majors and support their professional performance.

Keywords: Knowledge management, knowledge acquisition, knowledge storage, knowledge sharing, knowledge implementation, dynamic managerial capabilities

Dedication

I dedicate my dissertation to my family. A special feeling of gratitude to my loving parents whose words of encouragement and push for tenacity ring in my ears.

Acknowledgement

I would like to express my special appreciation and thanks to my supervisor Dr. Asma Ayari who has been a remarkable adviser to me. I would like to thank her for encouraging me to do my research and allowing me to make it knowledge worthy of research. Her advice on the research have been remarkable.

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Chapter One: Introduction

Chapter One: Introduction to the study

1.1. Introduction

There is an agreement among the proponents of the competence perspective that organizational resources and capabilities are of great significance, especially in organizational knowledge. By exploring the processes of creating and managing organizational knowledge in the available literature, it was found that different organizations have explicitly concentrated on the management processes and resources at different managerial levels. Through integrating and implementing managerial knowledge, managers are more likely to develop managerial capability in addition to rendering the service of their resources (Sebhatu, 2021).

Furthermore, managers possess processes through which their learning and capability development act as essential components in organizational knowledge creation processes and in adopting new forms that enhance dynamic organizational capabilities. On understanding the significance of managers as a resource, it is possibly argued that managerial knowledge can be prioritized for organizations to gain a competitive advantage over their existing rivals in the same industry (Hernández-Linares , et al., 2020).

Teece (2018) ensures that managers represent the main pillars behind dynamic capabilities. It is explained that some operational roles are related to developing present activities, including budgeting and staffing. More precisely, managers undertake two major roles that underpin dynamic capabilities. These roles include entrepreneurial roles and leadership roles. The entrepreneurial role entails

the capacity to sense and seize opportunities, coordinate resources, and adapt the organization and its business model. Concerning the leadership role, it is important to propagate the vision and values of the organization, prepare people with an appropriate strategy, and motivate them. Integration of such roles makes up what (Teece D. , 2018) recognizes as "entrepreneurial management," representing the functions of dynamic capabilities.

Dynamic managerial capabilities represent one form of dynamic capability that is mainly connected to what managers can do to renew and influence firms' resources and transform the basis of these resources to be able to reserve and improve these firms' performance and competitive advantage. Managers must develop entrepreneurial activities to improve performance and enhance firms' competitiveness. Such activities are made up both of sensing and seizing opportunities as well as transforming the resource base. Most previous studies concentrated on the roles of top managers and CEOs and entrepreneurial activities. However, middle and lower-level managers can also sense opportunities occurring in the market. The three major antecedents to dynamic managerial capabilities include managerial human capital, managerial social capital, and managerial cognition (Ambrosini & Altintas, 2019).

According to Afshari et al. (2020), the three antecedents to dynamic managerial capabilities, which are: managerial human capital, managerial social capital, and managerial cognition, are assumed to represent the roots of managerial capabilities. It is also suggested that they intertwine. The differences between managers are said to be attributed to these three antecedents. Based on these differences, the outcomes of their managerial practices differ. Some managers are more effective than others as the three antecedents are not evenly distributed.

Based on the three antecedents of managerial capabilities, Knowledge is found to be a major contributor to enhancing managerial capabilities. This can be recognized from the definition of dynamic capabilities which refers to "the capacity of the organization to purposefully create, extend, or modify its resource base" (Holzmayera & Schmidt, 2020). Managerial dynamic capabilities greatly depend on two sources: the skills of the managers and their managerial Knowledge (Ahmed, 2017).

Ahbabi et al (2019) indicated that managerial knowledge represents essentiality for making managerial capabilities as effective as possible. It was found that managers possess three categories of knowledge: personal, proprietary and commonsense. These categories are linked to the organizational knowledge that pile-up within the organization's context. The piled-up knowledge within any organization usually includes tacit, explicit and cultural knowledge.

Tacit knowledge refers to those "Skills, ideas and experiences that employees possess but are not codified and may not be expressed easily" (Chugh, 2015), however, explicit knowledge is "the type of knowledge that can be readily articulated, codified, stored and accessed (Héder & Paksi, 2018). This type of knowledge is transmitted to other individuals within the organization. Most forms of explicit knowledge are likely to be stored through different media types. This type of knowledge is occasionally observed as complementary to tacit knowledge.

Hugill and Helfat (2016) ensure that cultural knowledge is to a great extent, overlooked, though it is a significant type of knowledge that refers to a set of shared assumptions that act as a filter through which new knowledge is accepted or rejected (Chen , 2017). The cointegration between the two types of tacit and

explicit knowledge within organizations is significant and points out the possibility of managers' creativity and innovativeness.

It is important to know how to manage this knowledge to use it better, even though it is managerial knowledge. Knowledge is identified as a primary resource for organizational excellence, which is why it must be effectively managed. Consequently, organizations strongly need to improve the knowledge of the employees and exploit this knowledge to deal with the nonstop organizational complexities (Jayasingam, Jantan, Ansari, & Ramayah, 2014).

One of the most widely accepted definitions for the concept of Knowledge Management is the one introduced by Bhanu et al. (2016), which refers to knowledge management as “the process that deals with obtaining, processing, storing, disseminating and applying of knowledge and information within an organization for supporting and enhancing its business performance and employee satisfaction”. Others suggest that knowledge management is ‘the process of capturing, distributing and effectively using knowledge (Saeed, 2016). Through these two definitions, knowledge management can be understood as the activities through which information and knowledge can be organized holistically within the organization.

Chen & Lian (2019) argued that Knowledge Management (KM) is established on the assumption that organizations possess a piled-up volume of data that is made up of “confidential information, reports, tangible information, information like financial information”. Various techniques and mechanisms through which irregular data is organized and converted into usable and practical data that form knowledge Management processes. There are various processes and stages for having better knowledge management.

Alias et al. (2018) argue that 'Knowledge Acquisition' refers to 'the knowledge that an organization attempts to obtain from external sources. Furthermore, knowledge acquisition is "the process of extracting, structuring, and organizing domain knowledge from domain experts into a program. Scientists have developed several knowledge acquisition tools and techniques with their strengths and weaknesses. Pruzinsky (2017) suggests that the most commonly used tools and techniques include; observation, interviewing, repertory grid analysis, and protocol analysis.

Knowledge sharing could be defined as 'linkages that relate to individual performance and influence employees' work approaches such as job satisfaction. Knowledge sharing enables comfortable working environments that provide wide access to information and a great opportunity to learn from others. Besides, knowledge sharing provides enough resources and support not only for the management but for the employees too. The findings of some research papers confirm that knowledge-sharing behaviour typically has a positive impact on employees' job satisfaction (Hussin & Mokhtar, 2018).

Knowledge Creation is "the continuous transfer, combination, and conversion of the different types of knowledge, as users practice, interact, and learn" (Alias et al., 2018). Knowledge could be created through different processes that include practice, collaboration, interaction, and education. Knowledge creation and Knowledge sharing go hand in hand as the different knowledge types are shared and converted. As knowledge has become essential for the success of modern organizations, the ability to create new knowledge is now at the heart of the organization's competitive advantage. In other words, creating knowledge could be the magic formula that enables a firm to exceed its market rivals (Pruzinsky, 2017).

The concept of 'Knowledge Codification' mainly refers to 'the conversion of tacit knowledge to explicit knowledge, so that the knowledge can be

used in the organization by the staff. Another definition refers to knowledge codification as a ‘representation of knowledge so that an individual or an organization can reuse it. In other words, knowledge codification is knowledge representation to make it easily accessible and transferable (Abbas & Sağsan, 2019). There are four main principles of knowledge codification. These principles are; to define strategic intent, identify existing knowledge, evaluate existing knowledge for usefulness, and determine the medium for codification and distribution (Ahhabi et al., 2019).

The concept of ‘Knowledge Retention’ basically means ‘keeping the knowledge within an organization, even though people carrying that knowledge are leaving. Besides, knowledge retention typically refers to capturing knowledge in the organization so it can be used later. Some researchers have determined five knowledge repositories where knowledge can exist or be retained in an organization. These five knowledge repositories include; individuals, culture, transformations, structures, and external activities. They also regard a knowledge retention strategy as a basic part of the knowledge management (KM) process. Thus, an effective knowledge retention strategy typically identifies the knowledge resources which are at high risk, and that must be retained. Then, it implements specific initiatives to keep these resources in the firm (Alias et al., 2018).

Understanding how knowledge management can impact dynamic managerial capabilities in different organizations requires more investigation into the available theories that address knowledge management and dynamic managerial capabilities. One of these theories is the Knowledge-based theory which ensures that the activities conducted by the managerial level in the organization are likely to help create, organize, transfer and apply knowledge (Fainshmidt & Frazier , 2017). The theory ensures that strategies of Knowledge Management play the role of "managerial configurations and reactions to catalyze embedded knowledge into

organizational performance". Organizations can choose numerous Knowledge Management strategies so that they can be compliant with specific organizational contexts. Managers' knowledge is addressed and employed effectively to produce highly effective managerial capabilities (Bianchi et al., 2022).

The presents research aims to explore the impact of knowledge management on dynamic managerial capabilities in STC Bahrain.

1.2 Research Problem

Developing and enhancing employees' managerial capabilities is an essential step within any organizational context toward becoming competitive and granting survival in the changing global market (Ambrosini & Altintas, 2019). All organizational assets can be devoted to developing these capabilities, including the knowledge that is possessed and managed by the organization. The significance of knowledge is ensured since it constitutes a pivotal element on which employees in the public and private sectors rely to fulfil their assigned tasks (Abbas & Sa'ad, 2019).

The impact of knowledge management on managerial capabilities is a questionable issue that has not been broadly focused on, particularly in the GCC region. Previous studies that linked knowledge management to dynamic managerial capabilities are rare to the researcher's knowledge. Thus, it is evident that there are two sources for the present research problem: empirical and theoretical. The empirical source of the problem is evident from some interviews carried out by the researcher with ten employees in STC Bahrain to explore the level of knowledge management practices and the endeavours to improve dynamic managerial capabilities (Appendix -1). The research found from the content analysis for these interviews that the employees are not certain of these KM practices or those dynamic

managerial capabilities endeavours. Recognition of KM practices and dynamic managerial capabilities improvement is not evident.

The other source of the research problem is theoretical, which is evident from the shortage of previous research that cast light on the impact of knowledge management on dynamic managerial capabilities in the kingdom of Bahrain.

Therefore, knowledge management's role in enhancing employees' managerial capabilities in Bahrain is a questionable issue, especially in telecommunication companies such as STC in Bahrain. Investigating this relationship became more significant due to the roles played by telecommunication companies in supporting all other sectors.

1.3 Research Questions

The following questions are expected to help the researcher reach evidence-based conclusions.

Central research question:

What is the impact of knowledge management on dynamic managerial capabilities in STC Bahrain?

Four minor research questions are developed as follows:

- (1) what is the impact of knowledge acquisition on dynamic managerial capabilities in STC Bahrain?
- (2) what is the impact of knowledge storage on dynamic managerial capabilities in STC Bahrain?
- (3) what is the impact of knowledge sharing on dynamic managerial capabilities in STC Bahrain?

(4) what is the impact of knowledge implementation on dynamic managerial capabilities in STC Bahrain?

1.4. Research Objectives:

The key aim of this study is to examine the impact of knowledge management on dynamic managerial capabilities in STC Bahrain.

1.1.4. Specific Objectives:

(1) To examine the impact of knowledge acquisition on dynamic managerial capabilities in STC Bahrain.

(2) To examine the impact of knowledge storage on dynamic managerial capabilities in STC Bahrain.

(3) To examine the impact of knowledge sharing on dynamic managerial capabilities in STC Bahrain.

(4) To examine the impact of knowledge implementation on dynamic managerial capabilities in STC Bahrain.

1.5. Research Significance:

1.5.1. Theoretical Significance:

The research presents the concepts of knowledge management, on dynamic managerial capabilities, and different concepts related to them.

The research presents the theories that explain knowledge management, on dynamic managerial capabilities and the relationship between them.

1.5.1. Practical Significance:

The present research can be significant for the Bahraini government because the research findings can be implemented by the government organizations in the kingdom of Bahrain, especially the ministry of information affairs, which is responsible for applying the information and communication strategies in the kingdom of Bahrain. The government communication company in Bahrain (Batelco) can also benefit from these findings. The concentration of the dynamic managerial capabilities is one of the trends of the Bahraini government in the economic vision, so this research is expected to be one of the academic contributions that enhance the applicability of the vision.

In addition, the present study is significant for private sector organizations, especially those related to the communication sector. The study shows the best practices for knowledge management in the communication sector. Private sector organizations can benefit from these practices and are likely to put things right in terms of managing the knowledge of their employees.

The study is also significant for HRM practitioners who need to support the dynamic managerial capabilities of their employees. The study shows the sources of these dynamic managerial capabilities and how they are possibly enhanced. Based on the findings of the present research, HRM practitioners can establish some of their strategies to support and improve dynamic managerial capabilities.

Academicians are also likely to benefit from the findings of the present research. Future research is suggested by the end of the present research in light of the researcher's investigations and identification of the shortage in some areas related to the knowledge domain of the present study.

1.6. Study Settings

The present study is made up of four chapters. The following is an outline of the contents of these chapters:

Chapter 1 is entitled "Introduction," an introductory chapter for the entire study. The most important purpose of this chapter is to provide the readers with a background on the research topic and what is being targeted through this research. The chapter covers the statements of the research problem, research questions, objectives, significance of the study, study setting, and the research terminology.

Chapter 2 is entitled "Literature Review: The Second Chapter presents the readers with a comprehensive background on the research variables and how they are likely to be linked." This chapter is made up of two main sections. The first shed light on the independent variable (knowledge management), and the second on the dependent variable (dynamic managerial capabilities), followed by previous studies' perception of the relationship between knowledge management and dynamic managerial capabilities. The theoretical framework of the research shows how the research hypotheses are formed.

Chapter 3 is entitled "Research methodology." This chapter informs the readers about how the present research is conducted by introducing the selected research methods, design, and instruments. There is an explanation of how the research instrument is designed, circulated, and analyzed. The statistical procedures are also explained in this chapter.

Chapter 4 is entitled "Results, Recommendations, and Conclusion": This chapter is dedicated to presenting a summary of the findings with the research implications for different stakeholders, including STC Bahrain as the research organization, communication companies in Bahrain, the Bahraini public sector,

HRM practitioners, and HRM academicians. There are also some recommendations and suggestions for future research.

1.7. Research Terminology

The terminology used in this research is as follows:

- Knowledge
- Knowledge Management
- Knowledge acquisition
- Knowledge storage
- Knowledge sharing
- Knowledge implementation
- Tacit Knowledge
- Explicit Knowledge
- Managerial Capabilities
- Dynamic managerial capabilities

1.7.1. Knowledge:

“Familiarity or awareness, of someone or something, such as facts (descriptive knowledge), skills (procedural knowledge), or objects (acquaintance knowledge), often contributes to understanding” (Steup & Neta, 2020).

1.7.2. Knowledge Management

Girard & Girard (2015) define "the set of capabilities to which an organization can create, share, and apply knowledge resources to generate value and competitive advantage".

1.7.3. Knowledge acquisition

“The process used to define the rules and ontologies required for a knowledge-based system” (Abbas & Sağsan, 2019).

1.7.4. Knowledge storage

“The soft or hard style of preserving both individual and organizational knowledge in a way that can be easily retrieved” (Bucci & El-Diraby, 2018).

1.7.5. Knowledge sharing:

“The process of exchanging tacit and explicit knowledge (data, information, know-how, skills, feedback and expertise) among individuals to accomplish their duties and organizational goals and create new knowledge among employees” (Lei, et al., 2021).

1.7.6. Knowledge implementation:

“An embedding process through which knowledge is incorporated into products and services to gain competitive advantage” (Chiu & Chen, 2016).

1.7.8. Tacit Knowledge:

“People possess skills, ideas and experiences but are not codified and may not necessarily be easily expressed” (Héder & Paksi, 2018).

1.7.9. Explicit Knowledge:

“The knowledge that can be readily articulated codified, stored and accessed” (Haddy et al., 2020).

1.7.10. Managerial Capabilities:

“The firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Vrontis et al., 2021).

1.7.11. Dynamic managerial capabilities

“Managerial abilities to modify and reconfigure firm routines, processes, functional competencies, resources and capabilities in order to maintain competitiveness” (Haapanen et al., 2020).

1.8. Research context:

The present research casts light on the telecommunication sector in Bahrain. The telecommunication sector in Bahrain includes three actors (Batelco-Zain Bahrain- STC Bahrain). Only one company, Batelco, is a Bahraini company while the other two companies are multination. Zain is a Kuwaiti company and STC is a Saudi one. The existence of the three companies in the Bahraini business environment created a high level of competition especially when the requirements of customers in the telecommunication market and the high expectations of actors of other industries are considered (AlFayz, 2023).

STC was formerly known as VIVA Bahrain. It is a telecommunications company headquartered in the Seef district, Manama, the capital of Bahrain. The company is owned by the Saudi Telecom Group and the Commercial Services Company since March 2010.

Chapter 2

Theoretical Framework & Literature Review

Chapter 2: Theoretical Framework & Literature Review

2. 0. Introduction

The numerous and endless challenges that face the world these days created the necessity to know more than ever before. Specialists in different sectors could recognize that such hurdles must be dealt with carefully and under scientific schemes. It is evident that organizations that belong to different sectors struggle to survive, and those who survive to struggle to gain a competitive edge over global rivals who compete mercilessly in a terrible business environment in which the only stable face is "change" and "uncertainty (Afshari et al., 2020). The roles played by the management in such a turbulent business environment are evidentially crucial to working out such challenges. The roles and responsibilities undertaken by managers are no longer confined to managing the different organizational practices; rather, these roles are expanded to leading organizations towards excellence and being distinguished from others. Leading the change is another thing undertaken by managers that require them to make the best use of all the available assets and resources (Ahmed, 2017).

Kor and Mesko (2013) ensure that managerial capabilities constitute a significant source of excellence. Through these capabilities, managers are more likely to be consistent with the ever-changing business requirements and the non-stop shifts due to continuous technological advances. Usually, these capabilities entail high technical, human, and conceptual capabilities. Thanks to managerial capabilities, resources and the organization's competencies are always adequately established, integrated, and reconfigured, which is the most appropriate justification

for the maximized significance of managerial capabilities and can also explain why such capabilities positively enable organizations to become highly profitable and provide the organization with a competitive advantage (Widianto et al., 2021).

Managers with dynamic capabilities are ready to introduce effective managerial initiatives in the contexts of their organizations. Through these initiatives, they are likely to motivate their employees to set a mutual agreement to collaborate and exchange knowledge they possess and gain, support and improve their performance and the organization's competence (Jeonbuk et al., 2021). When organizations identify and make the best use of their individuals' knowledge bases, they become likely to fulfill the required levels of innovative products and identify novel business opportunities. Prior research investigated how managerial capabilities can positively impact organizational performance, employees' innovative initiatives (Qasim, 2022), and employee job satisfaction. However, little research has been identified on the relationship between dynamic managerial capabilities and knowledge management. The available literature's outcomes that address the two variables and the relationship between them remain questionable and require additional reinforcement.

In this chapter, the researcher sheds light on two variables: dynamic managerial capabilities as the dependent variable and knowledge management as the independent variable. In the first section of the chapter, the dependent variable is discussed. In this section, the researcher presents the readers with some of the most widely accepted definitions for managerial capabilities. Then there is a focus on how managerial capabilities are developed, followed by the types of managerial capabilities and the impacts of managerial capabilities. Then, dynamic managerial capabilities are explained in light of the theories that researchers depend on to

facilitate the reader's understanding of the research variables. The second section is specifically for presenting knowledge management.

This section sheds light on knowledge management in terms of the various definitions that exist for the concept and how these definitions represent numerous perspectives. Then the theories and models explaining knowledge management are presented, followed by an introduction to the components of knowledge management: knowledge acquisition, knowledge storage, knowledge sharing, and knowledge implementation. Then, the significance of knowledge management, the challenges of knowledge management, and the effects of knowledge management. After that, the relationship between knowledge management and artificial intelligence is explained and justified. Finally, there is a section that addresses knowledge management and COVID-19.

2.1. Knowledge Management

The current era is known as the "knowledge era". Aino et al. (2018) assume that in this era, knowledge has become the basic economic resource instead of traditional resources such as capital, natural resources, and labor. Such resources like capital and labor have become secondary ones, as having specialized knowledge could easily obtain these resources. Recently, knowledge has been regarded as an essential item in our daily activities that enables us to perform our work efficiently (Bucci & El-Diraby, 2018). In addition, knowledge has become the most important resource for individuals, organizations, and the whole economy. In the modern business environment that is extremely challenging and competitive, knowledge has become the most precious asset that could guarantee the survival and development of organizations. In other words, knowledge is now seen as the magic formula that formulates the success of modern organizations (Vilani & Chong , 2017).

Therefore, all organizations are strongly required to raise their knowledge productivity and enhance their knowledge workers to survive, grow, and meet the complex challenges of the modern business environment. Besides, knowledge has become such a crucial resource in organizations nowadays, which is why it has created a remarkable interest in managing it effectively (Abbas & Sagsan, 2019). Such an increasing interest in knowledge has led several scholars and researchers to investigate the role of knowledge management (KM) in enhancing organizational performance. Besides, the idea of using knowledge in the management of knowledge has long been central to management theory and management practice (Paliszkiewicz et al., 2017).

2.1.1. Definitions of Knowledge Management

Bucci & El-Diraby (2018) admit that the notion of knowledge management (KM) depends on the assumption that organizations have a high volume of data that consists of confidential information, tangible information, financial information, reports, etc. Modern organizations tend to implement numerous approaches, mechanisms, and techniques to accomplish an extremely high level of knowledge management. While some researchers see knowledge management (KM) as a natural process that prevails in all present-day modern organizations, others regard it as an integrated system that significantly combines human resources, processes, and state of the art within an organization for achieving long-term and sustainable goals through improving organizational performance based on learning (Granados et al., 2017). Whatever our view of knowledge management, it is important to realize the significance of that significant concept in today's business environment and to recognize the basic concept of "knowledge."

Hassan & Raziq (2019) assume that knowledge and information are synonyms. However, the two concepts do not exactly mean the same thing, and it is imperative to distinguish between them. On the one hand, "information" refers to data that has been processed and structured to make it more meaningful and useful to the person who will need it. Information is about adding context to discrete data and tends to be more refined than data. In other words, information to one person may not be information to another. Therefore, information consists of the data that has been processed and becomes useful to a user. Information always answers questions like what, who, when, where, how many, and how much. On the other hand, knowledge typically refers to the ability to use the information to enable individuals to achieve their objectives (Abker et al., 2019).

While information is embedded in theories, processes, or systems, knowledge is a non-visible or physical asset whose acquisition occurs through a convoluted intellectual process of perception, learning, communication, association, and reasoning. Knowledge can be classified into tacit and explicit (Curado & Vieira, 2019). While "tacit knowledge" is rooted firmly in action, procedures, processes, commitments, and values and can only be indirectly accessed, "explicit knowledge" is formalized and systematic, collected, stored, and easily transmitted from person to person. Moreover, knowledge is activated only when information is utilized to understand or apply new information. Therefore, the most valuable form of knowledge leads to innovations and breakthroughs (Mirzaee & Ghaffari, 2018).

Because of the great interest in investigating the field of knowledge management, several definitions have appeared for that important concept. One of these definitions describes knowledge management (KM) as the process of obtaining, storing, disseminating, and applying knowledge and information within an organization to support and enhance its business performance and employee

satisfaction. According to that definition, knowledge management comprises a range of management practices to create, identify, store, diffuse, replicate, and apply knowledge within organizations (Ahhabi et al., 2019).

Another definition for *knowledge management* is ‘the process of capturing, distributing and effectively using knowledge. In other simple words, knowledge management means organizing information and knowledge holistically. Moreover, the important concept ‘Knowledge Management (KM) could typically refer to ‘the process of capturing, distributing and effectively using knowledge (Héder & Paksi, 2018). Additionally, another definition defines *knowledge management* as ‘the process that deals with obtaining, storing, disseminating and applying knowledge and information within an organization to support and enhance its business performance and employee satisfaction (Payal et al., 2019).

On the other hand, Hussin & Mokhtar (2018) regard Knowledge Management (KM) as a key discipline that explains how knowledge is created, developed, retained, and applied within an organization or country and enables innovation and learning from past knowledge. Furthermore, knowledge management (KM) implies a series of steps, including identifying, collecting, storing, and sharing explicit, implicit, and tacit information with individuals throughout an organization. Another definition of that important concept is “a system of acquiring, capturing, sharing, storing, developing, capitalizing, disseminating, and utilizing knowledge efficiently in organizations” (Curado & Vieira, 2019). In addition, Knowledge Management (KM) typically depends on the assumption that organizations have a high volume of data that consist of confidential information, reports, tangible information, information like financial information, etc. (Chiu & Chen, 2016). Therefore, business organizations exert remarkable efforts to apply different techniques and mechanisms for organizing irregular data and

converting it into practical information that forms part of knowledge Management processes (Hussin & Mokhtar, 2018).

Most recently, knowledge management has been defined as “Knowledge management is the process by which an enterprise gathers, organizes, shares and analyzes its knowledge in a way that is easily accessible to employees. This knowledge includes technical resources, frequently asked questions, training documents and people skills” (Laurini, et al., 2023).

It is also referred to as “a set of processes that involve data mining and some method of operation to push information to users to make it easily accessible” (Nikolić, Taradi, Vukić, & Pedović, 2023)

2.1.2. Theories and Models Explaining Knowledge Management

Several scholars in academia and consultants gave knowledge management great interest and strongly supported it. Because of the special interest that knowledge management has received, several methods and applications have appeared that help enhance knowledge management. It is crucial to discuss the different theories, models, and strategies of knowledge management to better understand its role, nature, and content (Kianto, et al., 2018). These theories, methods, and knowledge management strategies vary according to the scholar, author, or practitioner that adopted them. However, several researchers argue that knowledge management initiatives must depend on a robust theoretical foundation to succeed, regardless of the theory of practice an organization prefers to deploy. They also assure us that the major knowledge management activities require a conceptual framework to operate within; otherwise, these activities will not be well coordinated and will not eventually produce the required knowledge management (Spiela & Kovac , 2017).

2.1.3 Knowledge Management Theories

Knowledge management emerged as a formal scientific discipline in the early 1990s. According to Koohang et al. (2017), knowledge management typically includes three main elements: people, process, and technology that could be employed in knowledge sharing, and these three elements co-exist with technology, people and processes in any organization. In addition, knowledge management typically comprises a range of practices through which organizations generate and apply knowledge. Grant (2018) argues that the theories of knowledge management comprise the key principles of knowledge management derived from the knowledge-based view of the firm. The central knowledge management theories are organizational, ecological, and techno-centric (Koohang et al., 2017).

2.1.3.1. Organizational KM Theory

According to Ode & Ayavoo (2020), organizational learning is a natural product of organizational inquiry. In other words, an individual (or group) engages in inquiry to understand and solve any inconsistency between the expected and actual outcomes. In the process of organizational inquiry, the individual typically interacts with other members, and learning occurs naturally. Therefore, learning is a direct product of this organizational interaction. This interaction goes beyond defined organizational rules and procedures (Raudeliuniene et al., 2020). In addition, the organizational knowledge management theory mainly focuses on organizational structures and explains how an organization's cultural and hierarchical design could help manage knowledge and knowledge processes. Eventually, the research paper of Ode & Ayavoo (2020) concludes that the organizational view of knowledge management focuses on how the design of an organization can effectively facilitate knowledge Management processes.

The approach of Chris Argyris and Donald Schon (1978) in forming the organizational learning theory is based on understanding two operation modes: the Espoused Theory and the Theory-in-use (Zhu, 2016). First, the Espoused theory mainly refers to the formalized part of the organization. According to this theory, any firm follows numerous instructions that determine how employees should conduct themselves to perform their jobs. These instructions strictly confine the individual in an organization to a set path. Second, the Theory-in-use represents the actual way things are done. Theory-in-use typically refers to the loose, flowing, and social way employees solve problems and learn (Hossain, 2021).

According to the organizational KM theory, individuals rely on interaction and brainstorming to solve problems instead of following the espoused theory. Grant (2018) reveals that there is a mismatch between these two approaches, and this mismatch is potentially problematic if the company enforces its espoused theory. In addition, it is assumed that to create an organizational environment conducive to learning, business organizations are strongly encouraged to accept the theory in use, and they have to facilitate the interaction of their individuals with their working environment in an unstructured and undefined way. Eventually, this research concludes that business organizations should exert remarkable efforts to provide the right environment for organizational inquiry and guarantee that formal procedures do not impede the inquiry.

2.1.3.2. Ecological KM Theory

Abuaddous et al. (2018) confirm that the Ecological Knowledge Management Theory generally focuses on people, relationships, and learning communities, including interactions among individuals and organizations. This theory greatly interests the internal and external forces that draw people together to share knowledge. In other words, the ecological view of knowledge management

focuses on the interaction of people, identity, knowledge, and environmental factors as a complex adaptive system akin to a natural ecosystem. Emetumah (2017) states that all-natural resources are considered essential and valuable even if humans do not recolonize them. The high value of all natural resources is not confined to their ability to satisfy humanity's needs, which is the core of ecocentrism. Moreover, humans are part of nature, and they bear a moral duty to preserve environmental resources. Additionally, the Ecological KM theory stresses the need to set limits to humanity's rights over the natural and environmental resources for conserving and protecting the environment from destruction.

2.1.3.3. Techno-centric Theory

No one argues that technology has greatly influenced our everyday lives as it is easily accessible and more convenient. Besides, technology has remarkably affected the management of the environment. As a result, technology has provided solutions to environmental problems and played a vital role in creating high environmental awareness (Afshari, et al., 2020). Chen & Lian (2019) argue that techno-centric theory mainly focuses on technology and the process of designing technology enablers to help facilitate the flow of knowledge and information storage. In other words, the techno-centric has a view that focuses on technology and that ideally enhances knowledge sharing and creativity. The tech-centric view of knowledge management concentrates on utilizing the technology that facilitates knowledge storage and transfer. Besides, this theory aims mainly to create effective technological systems that encourage knowledge sharing.

2.1.4. Knowledge Management Models

Corrêa et al. (2019) confirm that knowledge management science was first developed for companies, and then expanded to non-profit sectors, individuals, the public sector, regions, and countries. To better grasp knowledge management systems, we must first recognize the most well-known KM models. According to

Bucci & El-Diraby (2018), the basic role of knowledge management models is to ensure a certain level of completeness or depth in the practice of KM. In addition, understanding knowledge management models not only enables a better description of knowledge management systems, but it helps provide a better prescription for meeting organizational goals, as well.

Bucci & El-Diraby (2018) conclude that a good realization of KM models can provide a clear road map for getting organizations where they want to be with their knowledge management efforts. These are some of the most well-known knowledge management models that have attempted to address knowledge management from a universal and broader perspective.

2.1.4.1. Von Krogh and Roos Model (1995)

The Von Krogh and Roos organizational model (1995) is the first model that precisely differentiates between personal and social knowledge. In their model of organizational epistemology, knowledge is supposed to exist both in people's minds and in the links between them. This organizational model typically examines the nature of knowledge management from the perspective of staff members, communication and connection, organizational structure and layout, the network between members, and human resources management (Wu et al., 2019).

2.1.4.2. Nonaka and Takeuchi Model of Knowledge Conversion (1995)

The Nonaka and Takeuchi (1995) model of knowledge management (KM) is one of the most famous KM models as a universal model of knowledge creation and the management of coincidence (Payal et al., 2019). The Nonaka and Takeuchi models have four different modes of knowledge conversion. These four models can be shown as follows:

- **Socialization:** this mode of knowledge is Conversion is a technique of sharing tacit knowledge, the things that could be done through observation, imitation,

practice, and participation in formal and informal groups and communities. This process is typically preceded by creating a virtual or physical space in which a given community can interact on a social level (Curado & Vieira, 2019).

- **Externalization:** this model is an effective way of expressing tacit knowledge into explicit concepts. This process is the key to knowledge sharing and creation. That is mainly because tacit knowledge is highly internalized (LILIAN, 2018).
- **Combination:** this model is a technique for integrating concepts into a knowledge system. The synthesis could come in trend analysis, a review report, a brief executive summary, or a new database to organize content (Ahhabi, et al., 2019).
- **Internalization:** this model is a technique of embodying explicit knowledge into tacit knowledge (Abbas & Sa'ad, 2019).

2.1.4.3. Choo Sense-Making KM Model (1998)

Chugh (2015) indicates that the Choo Sense-Making KM Model mainly focuses on three highly interconnected processes: sense-making, knowledge creation, and decision-making skills. These three processes play a remarkable role in forming and sharing the organization's knowledge vision. This model mainly has the potential for knowledge creation. Besides, this model typically focuses on how the informational elements are carefully selected and effectively used to form organizational actions. The three processes of this model could be explained as follows:

Sense Making: this process aims mainly to guarantee that the organization can adapt and will continue to prosper in a complex and dynamic

environment through conducting activities and interpreting relevant information. This process enables an organization to understand changes, scenarios, and trends in their clients, competitors, suppliers, and other external environmental actors (Darraj, 2020).

Knowledge Creation: this process typically allows an organization to acquire, create, organize, and process information to generate new knowledge through organizational learning. This new knowledge obtained through this process allows an organization to develop new capabilities, redesign its organizational processes, improve the existing products and services, and create new ones (Hussin & Mokhtar, 2018).

Decision Making: the bounded rationality principle mainly constrains this decision-making process in organizations. An organization must choose the best option among the presented ones and pursue it based on its strategy (Fernandes, 2018).

2.1.4.4. Technology, People and Processes Model (2011)

The Technology, People, and Processes Model is a very interesting model of the evolution of KM that Edwards developed in 2011. According to this model, any KM system has three basic phases: people, technology, and processes. This model indicates three main successive phases: technology guides the first one, people guide the second one, and processes guide the third phase. These three phases of knowledge management could produce better results in succession (Mohajan, 2017).

2.1.4.5. WIIG Model (1993)

The Karl Wiig KM model, introduced in 1993, mainly depends on the basic principle that says for knowledge to be valuable and useful, it has to be well

organized and effectively synchronized. This model tries to define different levels of internationalization of knowledge. There are four essential dimensions in the WIIGS KM model. These dimensions are completeness, connectedness, congruency, and perspective and purpose (Kim & Yun, 2015).

Completeness: this dimension typically describes how much relevant knowledge is available from a given source. Sources of knowledge normally vary from human minds to knowledge bases, like tactics or explicit knowledge. Therefore, ensuring that the necessary knowledge on the subject is available and complete is crucial (Curado & Vieira, 2019).

Connectedness: this dimension stresses the existence of well-defined and well-understood relationships between the different knowledge objects. This dimension implies that most knowledge objects are connected. The more connected a knowledge base is, the more consistent the content is and the greater its value for the organisation (Héder & Paksi, 2018).

Congruency: this dimension depends on the fact that a knowledge base is congruent when all the concepts, perspectives, facts, judgments, values, and relational connections between objects are consistent. However, a great deal of knowledge content does not meet this dimension (Haddy et al., 2020).

Perspective and Purpose: this dimension of the Karl Wiig KM model is a technique that enables us to know something, but we have to understand it from a particular point of view for a specific purpose. Much of our knowledge can be organized according to the dual dimensions of perspective and purpose (Gloet & Samson, 2020).

2.1.5. Knowledge Management Components

Knowledge management has been receiving increasing interest for a long time. It was regarded in the beginning as an academic discipline; however, it was employed at the organizational level as experts believed it could benefit both individuals and organizations (Raudeliuniene et al., 2020). It is believed that the management of an organization's available stock of knowledge resources or intellectual assets has become a universally popular topic for academicians and practitioners. However, it is important to recognize knowledge management's main components (KM) components. Regardless of the school of thought, the KM process has four core components. Chen (2017) discussed the four components of the knowledge Management processs: knowledge acquisition, knowledge storing, knowledge sharing, and knowledge implementation or utilization. Here are the major components of knowledge management:

2.1.5.1. Knowledge Acquisition

As knowledge has become essential for the success of modern organizations, the ability to acquire new knowledge is now at the heart of the organization's competitive advantage. Acquiring knowledge could be the magic formula that enables a firm to exceed its market rivals. According to Gonzalo & Pinzon-Castro (2017), "knowledge acquisition" is the first component of the knowledge Management processs that plays a vital role in turning the organization into a learning one. Besides, "knowledge acquisition" is typically defined as extracting, structuring, and organizing domain knowledge from domain experts into a program. In addition, "knowledge acquisition" could refer to "the knowledge that a firm can try to obtain from external sources." Knowledge could be created through different processes that include practice, collaboration, interaction, and education (Gonzalo & Pinzon-Castro, 2017).

In addition, knowledge acquisition is "the process of extracting, transforming, and transferring expertise from a knowledge source." Scientists have developed several knowledge acquisition tools and techniques (Fernandes, 2018). The most commonly used tools and techniques include observation, interviewing, repertory grid, and protocol analysis. Each one of these tools and techniques has its strengths and weaknesses. Colinting (2017) argues that when an organization determines the needed level of knowledge, it can determine the cognitive gap that should be reached and that requires it to be filled.

Additionally, knowledge acquisition requires organizations to search for new knowledge and information, both inside and outside. Besides, this process typically involves the new implementation of knowledge or replacing the current content within the organization's explicit and tacit knowledge. Colinting (2017) concludes that knowledge acquisition is a crucial capability that enhances an organization's absorptive ability to identify and acquire external critical information.

2.1.5.2. Knowledge Storage

Abbas & Sağsan (2019) assume that knowledge Storage is a basic part of knowledge management (KM) process. When organizational members learn and keep stock of what they have learned through individual, groups and organizational level interactions, the organization becomes a learning one. A learning organization should keep stock of the knowledge that its members have acquired, and it should use its old knowledge as a basis of acquiring new insight in knowledge creation. Besides, it has to discard its outdated knowledge, and it should ensure that knowledge is available for every member of the organization that requires it.

Knowledge Storage simply refers to keeping the knowledge within an organization; despite the fact that people carrying that knowledge may leave the organization. Besides, knowledge retention typically refers to capturing knowledge

in the organization so that it can be used later. Some researchers have determined five knowledge repositories where knowledge can exist or be stored in an organization. The five knowledge repositories where knowledge could be stored include individuals, culture, transformations, structures, and external activities (LILIAN, 2018).

2.1.5.3. Knowledge Sharing

Grant (2018) thinks that knowledge management has gained wide popularity as a management concept that benefits organizations that achieve remarkable success by sharing and utilizing their knowledge as an intellectual resource. Therefore, knowledge sharing could be regarded as an integral part of the knowledge Management processs that widens the base of parties who benefit from the stored knowledge. In addition, "knowledge sharing" could be defined as the linkages that relate to individual performance and influence employees' work approaches, such as job satisfaction (Lemlem & Tarekengn, 2017).

Girard & Girard (2015) argue that when an organization's intellectual assets are only stored in archives in procedural manuals and documents without being shared, they become valueless. Sharing the available and important information with those in need is a meaningful part of the knowledge Management processs. Some factors could help enhance an organization's knowledge sharing, including personal inclinations, technology, and organizational variables.

*** Benefits of Knowledge Sharing**

For several reasons, some research papers confirm that knowledge sharing is important to organizations. According to Samsir (2017), knowledge sharing could present several benefits for an organization: increasing innovation;

reducing the cost of operation; increasing efficiency and effectiveness, increasing the organizational bottom line, and speeding up meeting production targets. Moreover, knowledge sharing typically enables comfortable working environments that provide wide access to information and a great opportunity to learn from others.

Besides, Rose et al. (2017) allege that knowledge sharing provides enough resources and support for both the management and the employees. In addition, knowledge sharing among employees in the same department in an organization could enable the organizational members to meet their individual goals faster and make it easy for them to find innovative solutions to their problems. Eventually, Khanal & Dr Poudel (2017) concluded that knowledge-sharing Behaviour typically positively impacts employees' job satisfaction. For all the previously mentioned benefits of knowledge sharing, organizational members should be encouraged to share information with other organizational members, especially in areas of their core competencies.

***Weaknesses of Knowledge Sharing**

Gloet & Samson (2020) discussed some factors hindering organizational members from distributing or sharing knowledge. These factors include lack of organizational trust, interpersonal relationships, skills and time inadequacy, and organizational level. In addition, knowledge sharing could have its weaknesses, as some organizations lack a culture that allows the distribution of knowledge. Even if the organization does have individuals who own the sharing culture, they might not know how to share knowledge effectively. Therefore, Abker et al. (2019) ensure a strong correlation exists between organizational culture and knowledge sharing as an encouraging environment with shared core norms and value orientation could enhance and increase knowledge sharing among employees in the

organization. Moreover, most knowledge is designed specifically for a particular organizational setting, which is why such available knowledge could be valueless for other organizations. It is also believed that other elements that could hinder the effective implementation of knowledge sharing. These elements include interpersonal help, self-efficacy, and the type of leadership adopted in an organization (Butt , 2017).

2.1.5.3. Knowledge Implementation

Hazel (2020) considers knowledge management not limited to information creation, acquisition, sharing, and storage. As such: information that is created, acquired, shared, and stored needs to be effectively implemented or utilized. Besides, knowledge could be accessed at three stages: before, during, or after KM-related activities. Knowledge implementation could be regarded as the last and most important component of the knowledge Management processs. Knowledge implementation implies making knowledge active and more appropriate for the organization in creating value (Grant, 2018). As a result, utilizing knowledge management (KM) could benefit an organization that deploys an effective knowledge management system. For example, it could increase the knowledge and information of employees, two things that eventually increase organizational productivity. Besides, there is a positive association between knowledge utilization and administrative and technical innovation. Effective utilization of knowledge could help an organization increase product and service quality, staff productivity, and deliverable consistency (Chung & Yoon, 2020). It has been identified that

knowledge implementation is statistically significant, and it does have a positive influence on organizational performance (Wang & Yang, 2021).

Additionally, Stephen (2017) argues that a successful knowledge management system could be extremely beneficial for an organization in offering knowledge for efficient usage of information and effective implementation. This paper also adds that shared knowledge must be utilized, as the shared knowledge without the practical application by the receiver does not benefit anyone. In addition, an organization that seeks to deploy a successful KM program has to capitalize on intellectual and knowledge-based assets. However, the research paper by Stephen (2017) confirms that implementing a knowledge management program is not as easy as it might seem. The author concludes that an effective implementation of knowledge that could help mature the overall effectiveness of an organization will require efficient personnel resources and generous funding. Besides, the results of this paper reveal that knowledge sharing significantly impacts knowledge management utilization in an organization.

2.1.6. Significance of Knowledge Management

Abbas & Sa'ad (2019); Abuaddous et al., (2018); and Chen (2017) agree that knowledge management (KM) has become a key component of organizational management. However, the organizational theory has not yet provided a clear notion of the significance of knowledge management. Besides, its significance has not been given an appropriate unified and universal definition for drawing the attention of organizations. Recently, knowledge management has been regarded as one of the key components to providing a competitive advantage to organizational success, as knowledge from assets provides organizations with a good understanding of their firms and practices (Huynh, et al., 2022). It is assured that a positive relationship between knowledge management and competitive advantage

exists in Sudanese industrial firms. Knowledge sharing has a significant effect on competitive advantage (cost and quality). Knowledge management efforts typically focus on organizational objectives such as improved performance, competitive advantage, innovation, the sharing of lessons learned, and continuous improvement of the organization (Nwaiwu & Imafidon, 2017).

Knowledge management (KM) is now one of the key components to providing a competitive advantage to organizational success. In simple words, knowledge management (KM) has become an effective tool that could be employed by those organizations that seek to operate at a high level of performance and to achieve the maximum satisfaction of all customers (Curado & Vieira, 2019). Besides reviewing the existing body of literature, there is evidence of a positive relationship between knowledge management and sustainability. According to Iqbal et al. (2019), knowledge management could remarkably contribute to the benefits of individual employees, communities of practice, organizations, and the whole country. On the organizational level, knowledge management enables an organization to gather knowledge from their assets, which provides them with several advantages, such as comparing the gathered knowledge that can aid in the rapidly changing environment within the industry. If the organization implements a knowledge management system effectively, its knowledge base will make it easier to find the data it needs from qualified SMEs (Kim & Yun, 2015).

There have been several claims for a positive relationship between the knowledge Management processes and organizational performance and employee satisfaction; however, the researchers who have proved it are comparatively few. According to Mirzaee & Ghaffari (2018), the practice of knowledge management (KM) has gained much importance in the last few decades. This paper also assures that effective knowledge utilization could be amazingly helpful in enhancing the

level of innovation in an organization and achieving programs, conducting research and other related academic activities. In addition, Mirzaee & Ghaffari (2018) conclude that knowledge utilization related to access and usage of information significantly contributes to enhancing organizational performance and that the effective knowledge utilization process is critical not only to the growth of business organizations but to their survival, as well.

Besides, it is believed that knowledge management could work as the most important and valuable resource for the organization, allowing organizations to compete fiercely in the market (Elmorshidy, 2018). Additionally, an organization that effectively deploys a successful knowledge management system could achieve remarkable results in reducing operational costs and improving organizational productivity. For example, Latif et al. (2019) reveals that knowledge from assets typically provides organizations with a high understanding of their practice. Besides, it is confirmed that gathering knowledge from the organizations' assets could provide them with several advantages, such as comparing the gathered knowledge that can aid in the rapidly changing environment within the marketplace. In addition, the individual's part of the organizations that gain a deep understanding of the organization's knowledge could improve their skills, which leads to providing more value to the organization (Chen, 2017).

2.1.7. Knowledge Management and Innovation

Latif et al. (2019) time is not waiting for our travel to the future, and it is coming quickly toward us, creating sudden shocks and discontinuities. Modern organizations are facing several complex challenges as they are forced to deal with an increasingly unstable environment. These challenges could include advances in IT, globalization, the rise of post-modernism, less cohesion in social values, a rise in living standards, and increased regulations and corporate governance demands.

Some researchers believe knowledge management has become a fundamental factor in business prosperity. They confirm that knowledge management has been adopted for over 30 years to explain how knowledge is created, developed, retained, shared and applied within an organization, enabling innovation and learning from past knowledge. They also regard knowledge management as an effective organizational mechanism that an organization deploy for accomplishing the continual development and promotion of innovation within the organization (Novak et al., 2020).

Several studies have attempted to investigate the relationship between knowledge and innovation. A number of these studies, including those (Abbas et al., 2019) and (Afshari et al., 2020), reveal that there does exist a strong positive association between knowledge management and innovation. Besides, some case-based studies have investigated this association, especially in innovation-driven business processes such as new product development and research development in knowledge-intensive businesses like IT and telecommunication. Abbas & Sağsan (2019) investigate how to leverage KM and IT capabilities to build agility in the context of innovation. The results of this paper confirm that knowledge management-driven organizations tend to exhibit higher levels of innovation.

Akeke & Olayiwola (2019) argue that the relationship between knowledge management and innovation reveals that it is important for both individuals and organizations to appreciate that only innovative organizations will have the ability to survive and even grow in the current and future complex and challenging business environments. It is assumed that innovations can only be achieved when an organization becomes a learning organ and continuously learns. The things that mainly characterize a learning organization are the stock of tacit and explicit knowledge it has acquired over time and how an organization utilizes the

available knowledge. Akeke & Olayiwola (2019) recommend that the stock of knowledge becomes useful for the organization only when it is utilized and shared to improve all the organizational processes and enhance human capital.

2.1.8. Knowledge Management and Organizational Agility

Organizational agility refers to the organization's ability to identify changes in the business environment and respond quickly to them via providing appropriate abilities (Cappelli, 2015). Among the key abilities of organizational agility are speed, internal flexibility, customer orientation, competence, proactivity, and timely response. Some research papers have associated organizational agility with knowledge management, especially when dealing with crises that are related to uncertainty (Cappelli, 2015). According to Singh (2018), organizational agility refers to the ability of an enterprise to sense changes in the business environment and respond effectively to them. Singh (2018) reveals that knowledge is the fundamental resource for an agile enterprise. This paper argues that the most important result of agile manufacturing functioning in the long term is continuously growing a knowledge base. Besides, this paper concludes that organizational agility enables organizations to quickly make decisions about effective strategies and practices and implement these decisions quickly and cost-effectively.

Moreover, Hassan & Raziq (2019) assure us that knowing when and how much organizational agility is needed could be an essential managerial skill. This paper argues that organizational agility is a special ability of an organization to sense and detect continuous changes in the business environment on time. Besides, organizational agility could be extremely beneficial for organizations as it helps them expand and acquire relevant competencies to take advantage of profitable opportunities and maintain a competitive position. Hassan & Raziq (2019) confirm that business organizations with this crucial capability effectively manage

uncertainty on the supply side. Eventually, this paper recommends that when it comes to deep uncertainty, organizational agility becomes an essential attribute of an industrial enterprise.

2.1.9. Challenges of Knowledge Management

By participating in a collaborative knowledge base system, every organization could have the opportunity to accelerate its learning, productivity, agility, and efficiency. However, some challenges may hinder the effective implementation of knowledge management systems within an organization (Colinting, 2017). It is argued that knowledge management systems are vital for an organization's success, yet several challenges are associated with efficiently organizing and managing the KM system. This paper recommends that the solutions of artificial intelligence are advisable for achieving the effective implementation of KM as the design of AI solutions helps save time, money, and resources (Razaei et al., 2020).

According to Singh (2018), implementing a successful knowledge management system requires thoughtful planning, and obstacles will necessarily present themselves. When organizations adopt an optimal knowledge management system, they may need to buy new computer software and configure it to meet their needs accurately. As a result, a few common challenges and problems could emerge. Curado & Vieira (2019) also assure us that knowledge management could be a double-edged sword and be described as both challenging and rewarding. This paper concludes that its benefits could be unbelievable when KM is effectively deployed. However, when it is badly implemented as the responsible team struggles with the technology, the time and money costs could be tremendous. Here are some of the major challenges that are associated with knowledge management systems:

2.1.9.1. Getting People Motivated

Habits are difficult to change, and people are always against new or unknown things. Company personnel often feel overwhelmed with all the processes and systems they are already forced to use to get their work done. Implementing a new knowledge management system could make the employees feel fatigued and burned out and afraid of the idea that they are expected to learn new systems (Singh, 2018) continually. They might feel comfortable with their systems for finding knowledge. Therefore, motivating the team to share their knowledge within a collaborative portal is difficult. A good way to motivate people in organizations is to start at the executive level with overpowering organizational culture challenges; the thing that could ensure the company exudes a KM culture that embraces learning, improving, changing and sharing (Razzaq et al., 2019).

2.1.9.2. Keeping systems secure

One of the important challenges of implementing KM systems is accommodating the right level of security. An important question to be asked is how to keep the platform secure. It is crucial to shield confidential information from most users and allow easy access to those with the needed credentials. An effective knowledge management system is supposed to improve learning and innovation within the company and the company alone, as having critical knowledge leak to competitors or hackers could be very harmful (Archer-Brown & Kietzmann, 2018).

2.1.9.3. Keeping up with Technology

Updates in technology become too frequent with time. Therefore, individuals should keep up with the new technology trends. Staff may start to experience the onset of technology fatigue. They need to learn about new programs and processes that their company decides to implement. However, they might have difficulty focusing on their core job duties while continuously updating this system.

In addition, regulating how knowledge should be dispensed and transferring it quickly and effectively could be challenging (Santoro & Usai, 2018).

2.1.9.4. Measuring Knowledge

Another challenge in implementing a KM system is ensuring that knowledge contributions are accurately measured. Knowledge is not something that can be easily quantified. Knowledge is seen as complex as it is copied from human relationships and experience. Knowledge is difficult to quantify as it emanates from both data and varying human experiences. Therefore, it is of great importance to have the ability to determine which type of knowledge contribution is more valuable than another (Afshari et al., 2020).

2.1.9.5. Keeping Accurate Data

Out-of-date knowledge management could be of very little use. That is why ensuring its accuracy is a crucial thing. A KM system's basic function is to keep accurate and authentic basic data. The information in that system should be regularly verified and moderated. A good idea for keeping the content accurate and authentic is to set up occasional validation reminders for the original posters (Park & Kim, 2018).

2.1.9.6. Overpowering Shared Leadership

Convincing senior leaders in providing support and funding could be another complex challenge. It is not enough to get the staff involved in the KM system. It is important to have the company's executives on the same page. The concerned person in the KM system is responsible for collaborating with colleagues and the organization's leaders and persuading them to share their knowledge base for the organization's benefit. Besides, it is necessary for senior leaders to support their organization's KM system and to demonstrate its usage (Elmorshidy, 2018). To achieve consistency, they also have to share examples of employee successes, create

case studies to serve in favour of the KM system, and offer regular communication showing how the organization benefits from the KM system (Koohang, et al., 2017).

2.1.9.7. Making Search Easy

An important challenge for any KM system is making search for relevant data easier. In fact, most people do not want to spend more than a few minutes searching for information. Therefore, it is vital for an organisation to organize their knowledge resources in order to make the content of their information relevant, and to make the search feature more effective. An organisation could let the users search for their data by date, and by usefulness or importance (Rahman et al., 2018).

2.1.9.8. Rewarding Active contributors

Another challenge that faces the knowledge management system is the need for rewarding. It is widely believed that rewards are a good way to keep people, especially employees motivated. Therefore, organizations are strongly advised to offer an incentive for their most active users of the implemented KM system. By doing this, they set an example for the rest of their team to do the same thing. The active KM system users are those who present the biggest support needed for ensuring the knowledge-sharing platform is a success. The more their contributions are recognised and rewarded, the more robust the KM platform will turn out to be (Jamshed & Majeed, 2019).

2.2.9.9. The Effects of Knowledge Management

Recently, Knowledge has become one of the most highly valued commodities in the modern economy. Besides, knowledge has become the main tool of competitiveness and innovation that could enable business organizations to survive, grow, and prosper in today's challenging global economy. As a result, for such increasing importance of knowledge, knowledge management has proven

to play a vital role in improving the organizational performance. Therefore, it is widely believed that improved employee performance depends largely on knowledge and knowledge management (Tetiana , 2021).

Reviewing the existing body literature shows that Knowledge Management (KM) has an association with the performance of an organization. While several research papers assure that such association is strong and positive, other papers argue that this association is not significant. It is revealed that knowledge management possess a direct impact on the organizational performance. The result of this paper also confirms that Knowledge Management (KM) has become an extremely outstanding element for the success of modern organization (Abker, et al., 2020). Besides, it is concluded that when Knowledge Management (KM) is effectively and properly implemented, it not only enhances the internal strength of the organizations, but it boosts their external competitiveness, as well. This paper eventually recommends that a modern organization is strongly required to raise the productivity and sharing of knowledge for successfully overcoming the extremely complex challenges of the modern marketplace (Chen, 2017).

In addition, Abuaddous, et al., (2018) tried to investigate literatures critically to show and evaluate the real influence of knowledge management and some of its practices on enhancing organizational performance. The findings of Abuaddous, et al., (2018) are significant as they prove that has knowledge management (KM) including infrastructure capabilities and knowledge process influence positively in a huge manner on all the different aspects of organizational performance whether directly or indirectly. In addition, it was recommended that there is a huge need to continuously train and educate the learning organizations' CEOs about the increasing importance of knowledge process through several training programs and group works.

Besides, the research Kianto, et al., (2018) have proved that the knowledge Management processes in the working environment has a strong, positive, and significant impact on the level of the employee's job satisfaction. In addition, the findings of Kianto, et al., (2018) confirm that the intra-organizational knowledge sharing which is regarded as a key knowledge Management process has proved to significantly promote the employees' satisfaction with his/her job in most of the employee groups. Also, Mansor, et al., (2018) has proved that there exists a significant relationship between Knowledge Management practices discussed in this paper that include: knowledge acquisition, knowledge retention, knowledge creation and knowledge sharing and job satisfaction. Besides, this paper recommends further research to be carried out for enhancing our understanding of the concept of Knowledge Management and its impact on the employee's job satisfaction.

Furthermore, the paper of Hussin & Mokhtar, (2018) has proved that among the four knowledge management practices discussed on this study, knowledge sharing has proved to be more influential on the job satisfaction of the employees. In addition, this paper concludes that knowledge sharing, which has been found to be dominant among the others knowledge management variables, significantly contributes to job satisfaction. However, this study assures that knowledge creation gives no significance to the employee's job satisfaction. Moreover, the research paper of Jamil, (2017) tries to plan the appropriate methodologies that could enable us to evaluate the impact of knowledge management to enhance organizational performance. For accomplishing the main objectives of this paper, the author has proposed a theoretical model that is based on comprehensive and inclusive research in the extent of knowledge management and organizational performance. Finally, the results of this paper confirm that through a

wide-ranging organization of knowledge management practices, the probable model discovers the impact of each knowledge management practice on enlightening the level of organizational performance.

Significant results have confirmed that the components of the knowledge management (KM) process that include (knowledge management obtaining, knowledge management organizing, and knowledge management application) have a strong positive relationship with the organizational performance measured in terms of employee satisfaction. This paper is very important as it has provided the first empirical evidence of the relationship between knowledge management and organizational performance in the Nepalese financial sector (Khanal & Dr Poudel, 2017). Eventually, it is ensured that the components of the knowledge Management processs that include knowledge management obtaining, knowledge management organizing, and knowledge management application are positively correlated with the organizational performance measured in terms of financial and market results, organizational effectiveness, customer satisfaction, and employee satisfaction. Eventually, this study confirms that the performance of any financial institution is significantly and positively affected by various knowledge Management processses and practices adopted by these organizations (Khanal & Paudyal, 2017).

2.1.10. Knowledge Management and Artificial Intelligence

Change never stops in the business world; most organizations invest in different methods to drive that change. The change that numerous organizations seek could be represented by high profits, increased revenue, and the strong retention of highly talented employees. The organization's strategies for employing knowledge management could represent its specific method of driving change. Business organizations try to select the strategy that suits them to facilitate the efficient flow

of knowledge and foster a culture of knowledge sharing within the organization (Eaves, 2014). According to Dincer (2017), the efforts of knowledge management have a long history that goes back to the beginning of the previous century, including formal apprenticeship on-the-job discussions, corporate libraries, discussion forums, mentoring programs, and professional training. More recently, with the increased usage of computers in the second half of the 20th century, specific technological adaptations have been introduced to enhance further such efforts as knowledge repositories, knowledge bases, group decision support systems, computer-supported cooperative work, and expert systems. After that, the 21st century has gone through numerous changes and developments, which is something that has highlighted the significance of knowledge management (KM) as a value for an organization. In addition, knowledge management is crucial in accelerating technological development and the emergence of new products and services in society (Elmorshidy, 2018).

New work and business practice patterns have been developed in the current century to employ the new technological advancements to improve knowledge management (KM). Samad (2020) argues that artificial intelligence (AI) could improve productivity by automating data management, removing the need for intermediaries, and increasing profitability. In addition, Knowledge Management (KM) has been receiving great interest for a long time, and it is logical to be associated with Artificial Intelligence (AI). In other words, artificial intelligence has become a vital aid, and it should be there when we discuss implementing knowledge management systems. However, no survey has been conducted describing the use of artificial intelligence capabilities in knowledge management tasks since the early 2000s (Bucci & El-Diraby, 2018).

2.1.10.1. Relationship between Knowledge Management and Artificial Intelligence

A few research cases have investigated the relationship between artificial intelligence and knowledge management. Besides, there is a lack of research on how these two variables could be deployed to provide more benefits to an organization. However, Hadd et al. (2020) note that some business organizations have implemented artificial intelligence (AI) systems within their projects in order to allow for better knowledge management (KM). In addition, artificial intelligence (AI) can potentially improve the stability and effectiveness of the Internet of Things (IoT), greatly contributing to improved network communication, which would help to improve knowledge sharing and foster innovation in return. According to this paper, knowledge management could be integrated with artificial intelligence (AI) to benefit individuals and organizations. Moreover, this research concludes that combining the systems of artificial intelligence (AI) with knowledge management (KM) could help the organization's employees find documents easily with a unique ID or referenced words (Samad, 2020).

According to Yigitcanlar et al. (2020), new work and business practice patterns have been developed to perform better knowledge management (KM) through modern technological advancements. The research also argues that AI systems could assist with the knowledge Management processes that business organizations have already implemented. It also confirms that business organizations could use artificial intelligence (AI) to share, capture, and use knowledge within and across the organization's value chain. Moreover, this paper recommends that there is a need to develop a business model for implementing Artificial Intelligence (AI) to assist in conducting the processes of knowledge management (KM) within organizations.

2.1.10.2. Software Based on Artificial Intelligence

Researchers from the Skolkovo Institute of Science and Technology (Russia) have developed computer software based on artificial intelligence that is a good example of a specific solution to the COVID-19 crisis. That computer software typically automates the processing of computed tomography of the chest and detects foci of a dangerous virus. According to the founder of the start-up "AIRA Labs", M. Belyaev, when analyzing the data collected at the beginning of the pandemic, it was observed that doctors tend to overestimate the volume of lung damage, and sometimes significantly, by tens of per cent. The main reason for this overestimation is that when doctors see a strong lesion at some anatomical level, they may subconsciously believe that the lesion is just as severe in the other lungs. However, the other lungs may be almost clean, and the total percentage of the lesion might be significantly lower (Intellect , 2021).

According to the founder of the start-up "AIRA Labs," M. Belyaev, employing the new computer software allows doctors to assess the lesion's actual proportion and degree of severity. Moreover, its developer assures us that the total analysis time, considering the data transfer, was, on average, two minutes. After this period, the result of automatic processing becomes available to the radiologist. Moreover, the daily flow was six thousand studies at the pandemic's peak, and more than one hundred thousand studies were processed in 2020 (Gloet & Samson, 2020). For example, the number of scans performed increased several times, greatly increasing the burden on radiologists during the pandemic in Moscow. According to the center for diagnostics and telemedicine of the Moscow Department of Health, the new computer vision technology has helped in reducing the time for preparing a conclusion by an average of 7 minutes. The new artificial intelligence software has saved more than 700 hours a day. After conducting the required registration and

verification for that software, doctors can easily upload their images for consultation with artificial intelligence services (Tomé et al., 2020).

2.1.11. Knowledge Management and crisis

In the era of knowledge, problems and crises make it clear how important knowledge is. Knowledge is the most valuable resource any organization possesses, and the effective use of knowledge resources is imperative to ensure that the organization can survive and grow in uncertain times. It is not just organizations that rely on KM as their most valuable resource, but also countries tend to depend on knowledge management to provide them with accurate and easily accessible information that enables them to make sound decisions (Hazel, 2020).

In a crisis, critical knowledge has to be acquired, shared, and disseminated rapidly to respond to the crisis properly, which could be the main reason that shows the importance of KM during Covid-19. The Covid-19 crisis is one of humanity's most severe crises in the last decades. Several researchers and experts believe that we cannot underscore the significant role of Knowledge Management (KM) as a strategic knowledge resource during the Covid-19 crisis. They also assure that the effective management of knowledge and information has played a critical role in guiding decision makers to make strategic decisions on behalf of organizations. During the Covid-19 global pandemic crisis, knowledge management has ensured that knowledge is effectively acquired and shared to make strategic decisions (Juveta et al., 2021).

2.1.11.1. Knowledge and Covid-19 Crisis and Knowledge

The COVID-19 crisis began in December 2019 as a new and strange disease that originated in China. Within 3 months, the world was at war against a new, invisible, and strange enemy. The war is still ongoing, and there is great doubt

about when this war will end. As time passes, humanity is slowly solving the COVID-19 problem. Some experts think that COVID-19 will be completely eradicated, while others believe that this virus will stay around like the flu. However, no one knows when and how humanity will have the needed knowledge to solve the COVID-19 crisis. According to Biospace (2021), COVID-19 showed the world the immense power of knowledge and technology as the planet seemed to be a tiny village during the COVID-19 crisis (Biospace, 2021).

In addition, some experts and researchers argue that the distinctive feature of the COVID-19 crisis is that this crisis is about knowledge and information and that it can only be well understood in the scope of knowledge and information. They also regard the COVID-19 crisis as a great uncertainty and that a massive knowledge failure has been at its core—namely, the absence of a vaccine and the cure for COVID-19 (Harper , 2020).

2.1.11.2. The Covid-19 Crisis and Knowledge Management

Crisis (individual, organizational, and societal) exists because there is a lack of technology, people, or processes. The solution to any crisis requires using the elements of technology, people, and processes. These three elements adjust themselves very much to the COVID-19 crisis. A few research papers have investigated the topic of knowledge management and its employment in facing the COVID-19 crisis. One of these studies is the study (Bratianu & Bejinaru, 2021), which attempts to analyze COVID-19 from several points of view related to knowledge management science. In its research, this paper has analyzed some important elements related to the relationship between KM and the crisis of COVID-19. These elements include lack of information and difficulties in informing policies, lack of social knowledge; lack of basic scientific medical knowledge, lack of trust; competence and incompetency; management of knowledge and information by

politicians; and finally, the relationship between technology, people, and processes (Bratianu & Bejinaru, 2021).

In addition, the research paper of Tomé et al. (2022) attempted to analyze the impact of the Covid-19 crisis in organizations from the point of view of knowledge management. This paper has also emphasized the importance of organizational culture in ensuring the adoption of Knowledge Management (KM) within the organization during the COVID-19 pandemic. In addition, this paper analyzed KM questioning its different elements, including people, technology, and processes. This important research has concluded that there was a complete lack of social knowledge linked with organizational Behaviour in organizations. The thing that has eventually led to creating an organizational crisis. Eventually, the results of this research are remarkably significant as they assure that making use of the immense technology available has played a crucial role in facing and fostering the Covid-19 Pandemic crisis. Moreover, this study's findings also confirm that employing effective knowledge Management processes such as knowledge sharing, knowledge utilization, and learning exchange has already provided a great opportunity for the leaders of business organizations to share how their companies could man-oeuvre through the Covid-19 crisis and what significant lessons or changes they embraced during the Covid-19 pandemic (Tomé et al., 2022).

2.1.11.3. Knowledge Management Strategies and the Post-COVID-19

As knowledge was the main weapon humanity used in their war against the Covid-19 crisis, researchers assure that it will also be the key player in the post-COVID-19 era. The COVID-19 crisis has forced the development of emergent knowledge strategies. These knowledge strategies have some distinguishing characteristics that include using reason, is based on knowledge sharing and exploration processes, and emotional and spiritual knowledge. Moreover, these

knowledge-based strategies are implemented through complex thinking, and they can face the unpredictable future with disruptive changes, in which the dominant business logic is to survive and recover. According to Tomé and Gromova (2020), COVID-19 will emphasize the need for unknown-knowns, which are based on knowledge sharing, and unknown-unknowns, which are based on knowledge exploration; and knowledge exploitation and knowledge acquisition based on the known-knowns and the known-unknowns will become less valuable. In addition, this paper confirms that due to the foreseeable hybrid nature of the post-COVID-19 future, agility will be decisive for an organization's sustainability (Tomé & Gromova, 2020).

According to Kim (2020), the most important lesson we can get from the COVID-19 crisis is that we have to be ready for change. The best leaders will be those who can promote a hybrid world and choose the best agile strategies. Kim (2020) also assures us that an organization's basic dynamic capability will be its ability to conduct effective organizational change that will enable the organization to adopt new managerial methods, tools, techniques, and models used to acquire competitive advantages over rivals in the marketplace. He also concludes that in the post-COVID-19 era, leadership and trust will be the two basic elements for organizations to succeed and achieve their goals. Knowledge management will be the magic formula that will enable organizations to obtain high-rust and enlightened leadership. With trust restored, the COVID-19 crisis will vanish forever, economies will remarkably grow, and societies will significantly prosper. Therefore, organizations' leaders will have to adopt knowledge management strategies and develop competencies with agility to restore trust and be ready to deal with any change (Kim , 2020).

2.2. Managerial Capabilities

It is argued that managerial capabilities represent an outcome of integrating the employees' managerial skills and knowledge (Ahmed, 2017). Managerial performance and productivity can be enhanced when their capabilities accumulate and pile up. Developing managerial capabilities is essential for organizational growth. Managers working together as a team will likely capitalize on each other's knowledge and skills. In turn, the collective wisdom and all available capabilities are permanent issues determining the organization's personality (Barney & Hesterly, 2012).

Once organizations can reach a high level of managerial capabilities, they can possess the capacity to create a vision, formulate strategies, and make them work by communicating with the workforce (Ahmed, 2017). Based on previous research findings, it is indicated that the skills and knowledge of managers constitute the most important pillar for creating managerial capabilities. The main motivator for organizations is to invest in improving their employees' skills and knowledge to possess superior managerial capabilities, which organizations employ to improve their performance (Amabile et al., 2016).

2.2.1. Definition of managerial capabilities

There is an agreement that managerial capabilities constitute what an organization needs to achieve their business goals. In words, it constitutes the accumulative processes through which organizations can make the best use of all the available resources to increase the quality and quantity of the products. Such organizational processes can be considered firm-specific and improved over significant periods via complicated and innovative interactions among the organization's resources (Jonathan et al., 2016). One of the most widely accepted definitions for managerial capability is "the ability to achieve delivery or

performance requirements as demonstrated by the proposed use of management and other personnel resources" (Helfat & Martin , 2014).

Grant & Verona (2015) defined *managerial capabilities* as "the ability of the organization to perform repeatedly a productive task which relates either directly or indirectly to the organization's capacity for creating value through effecting innovative ideas." According to Nelson and Winter (1982), managerial capabilities constitute "high-level routines that provide the management of the organization with a set of decision options for producing an array of outputs." The organization's capabilities show how well it can use the resources to ensure that the explicit processes and tacit elements (like know-how and leadership) built into the processes work together. There is no doubt that managerial capabilities are likely to support organizational innovativeness and, at the same time, catalyze opportunity recognition and ability exploitation, which is a pivotal issue in organizations (Zhang et al., 2009).

2.2.2. Development of the managerial capabilities

Interest in management capabilities, especially the top management of organizations, is a core issue in the strategic management domain. Investigating managerial capabilities has enabled researchers to justify when management can represent a valuable firm asset and how they are likely to impact the organization's performance. It is accepted that the concept of managerial capabilities has been brought to bear on several related strategy questions (HugillEmail & Helfat, 2016).

The roots of managerial capabilities research are established in the resource-based view (RBV) of business strategy (Jonathan et al., 2016). Wernerfelt (1984) ensured that the resource-based view conducts analysis for any organization while considering it as a set of resources that are not easily imitated and, at the same time, non-substitutable. Managerial capabilities are considered

among the most significant resources contributing to competitive advantage creation when competitors do not possess the same managerial capabilities (Kor et al., 2007).

Following the resource-based view of strategy, an inclusive definition of managerial capabilities was provided. The earliest endeavours of the resource-based view theory of managerial capabilities did involve real issues such as their knowledge, expertise, and other capabilities. The managerial capabilities were later ensured to go further than the skills and abilities to cover how these are employed to achieve the organization's objectives within the available resources (Kor & Misangyi, 2008). It has long been recognized, especially through the entrepreneurial theory, that employees from different levels possess significant knowledge and experience. Based on the understanding of the RBV, managerial capabilities are regarded as some organizational resources. Accordingly, managerial capabilities can be considered as "the capacity of managers to run organizations and to make and implement strategic and operational decisions through an impact on and coordination of other firm resources, inputs, and capabilities" (Martin, 2011).

2.2.3. Types of managerial capabilities

Literature on managerial capabilities assumes two types of managerial capabilities: managerial skills and knowledge.

2.2.3.1. Managerial skills

Based on the findings of Cappelli (2015), managers must possess four major skills to lead their employees towards achieving the organization's objectives. These include professional skills, interpersonal skills, conceptual skills, analysis skills, and diagnosis skills, concerning professional skills. This type of skill is considered a specialized type that involves the required knowledge within their specialization or activity (engineering, economics, teaching, engineering, *etc.*). This type of skill is always acquired through attending formal education. Interpersonal

skills are the other type of skill, "the ability to work with people, to communicate with groups or individuals, and understand them" (Verhaest et al., 2017). The third type is conceptual skills. This type is reliant on the abilities of the managers of abstracting. Such abilities give managers the ability to analyze the organization as a whole. They help managers recognize the cause-effect relationships within the organization.

Furthermore, they are enhanced to think strategically. The analysis and diagnosis skills are understood as the ability of the manager to recognize an adequate response to a specific situation. Such skills enable the managers to identify the problematic issues and reach accepted causes, analyze the choices of response, select the optimal variant, apply the reached solutions, and control the outcomes (Kornelakis, 2018).

Further to the above and based on Kalleberg's (2008) conclusions, it is assumed that skill involves one competence that can be improved further. Katz (1974) proposed that effective organizational management is mainly based on three basic skills that managers require. The first is technical skills. These skills include high levels of recognition in addition to competence in a special activity based on processes and procedures as well as methods or techniques. Such skills are the most widely recognized and concrete as well. Consequently, most professional training courses mainly focus on developing specialized technical skills. The second type of skill is related to the human relations domain. These skills refer to "the abilities of managers to establish and maintain good contact with subordinates, superiors, other managers, and even people outside the organization" (Tooranloo et al., 2017).

These abilities help managers be consistent with the employees' ideas, perceptions, norms, and beliefs that are not in line with theirs. The above contributes

to establishing a safe and agreeable environment where employees feel free to share their opinions, which can stimulate employees to participate in all activities within the organization's context, including planning. Enhancing these skills contributes to making managers quite able to recognize the employees' requirements and motivate them while avoiding any potential negatives (Piva et al., 2005). The third type of these skills is conceptual skills. These skills are "the ability of managers to perceive the whole organization" (Ahmed, 2017). Such skills permit managers to recognize the extent to which the various functions of the organization are interdependent as well as represent the organization's relationship with the industry, the community to which it belongs, and the economy's political, social, and economic forces overall (Popescu et al., 2020).

2.2.3.2. Managerial Knowledge

Managers who represent the highest level within organizations are required to possess knowledge. Individual domains of managerial knowledge are integrated to make up individual managerial knowledge. Such knowledge can mostly be tacit and can be attributed to the fact that managers can obtain experience in managing and forming a routine in their management (Kor & Mesko, 2013). Managers are known to use specific documents or written formats to obtain knowledge related to important issues within their organizations. Nevertheless, they do not always employ this knowledge while carrying out their tasks. Consequently, managerial knowledge is tacit. *Tacit knowledge* is defined as “skills, ideas, and experiences that people have but are not codified and may not necessarily be easily expressed” (Chugh, 2015).

Within organizations, knowledge can be adopted through a learning process. Most of the knowledge acquired within the context of the organization can

always be developed within the knowledge pool that exists in the minds of the employees working there. This knowledge plays a positive role in enhancing the value of the organization's human capital and consequently contributes to enhancing productivity, creation and expansion of knowledge. Knowledge acquisition is directly transformed into standardized instruments and methods and given a codified status by the organization (Hetherington, 2011).

Literature about managerial knowledge identified three types of knowledge: personal, proprietary and commonsense, as related to the piled-up knowledge within an organization. The pile of information and knowledge involves tacit, explicit and cultural knowledge. Tacit knowledge has already been defined above. Explicit knowledge refers to “The knowledge that can be readily articulated, codified, stored and accessed (Helie & Sun, 2010). Explicit knowledge can be transmitted to other employees. Most explicit knowledge forms can be stored in some kinds of media. This knowledge is occasionally observed as complementary to tacit knowledge (Héder & Paksi, 2018). Concerning cultural knowledge, researchers think that this type of knowledge is frequently overlooked; however, it is important since it represents a set of shared assumptions that lay the role of a filter that new knowledge must go through to be accepted or rejected (Gourlay, 2007). Integrating tacit and explicit knowledge in organizations is significant and contributes to enhancing creativity and increasing innovativeness within production stages.

2.2.4. Impacts of managerial capabilities

Based on the empirical findings of the previous literature that addressed managerial capabilities, it can be ensured that such capabilities positively influence the organization's performance. One piece of evidence was provided by (Holcomb et al., 2009), who concluded that managerial capabilities are always likely to

significantly and positively influence the productivity of the organizational resources. The most recent research reached significant conclusions indicating that there are numerous ways in which managerial capabilities can improve strategic organizational effectiveness. These managerial capabilities represent a source for seizing every opportunity within the organizational context. Performance analysis of some law firms in the study of (Hitt et al., 2001) concluded that the costs of investments in improving the managerial capabilities do outweigh the benefits identified in terms of marginal productivity in these firms. Nevertheless, managerial capabilities increase synergies amongst these skills and productivity increases, which can ensure that human capital moderates the relationship between strategy and organization performance and that managerial capabilities enable the high-quality strategy to be as effective as possible.

Managers who possess high levels of managerial capabilities are likely to identify and seize opportunities better and faster than those whose capabilities are not at the same level, especially when these capabilities are dynamic (Popescu et al., 2020). The high-level managerial capabilities related to capturing opportunities involve managers' tacit knowledge; observing the potential of R&D investments and diverting funding accordingly; and matching employees to adequate R&D projects. Management can deploy these capabilities to capture all the opportunities before other organizations and potentially create superior returns (Hugill & Helfat, 2016).

2.2.5. Dynamic managerial capabilities

Dynamic managerial capabilities represent a high-level capability that is possessed by the organization's top management by dynamic capabilities. There are too many studies ensuring that top management has numerous significant contributions to the external change of the organization (Rosenbloom , 2000). It is argued that managers represent a pivotal component within the organizational ability

to change its major capabilities. Dynamic managerial capabilities were introduced as early as the first decade of the twenty-first century (Adner & Helfat, 2003) and the concept was significantly identified through the academic community. Nevertheless, since the introduction of this concept, there has been no universal agreement on one definition for this concept (Anzengruber et al., 2017).

2.2.5.1. Definition of dynamic managerial capabilities:

The definitions presented for the concept of dynamic management show some opposing opinions. On the one hand, dynamic management can be recognized as "an advanced learning ability of individuals" (Zou, 2018). The supporters of this definition ensure that dynamic management is inseparable from the three key competencies of integration, construction, and reconfiguration capabilities. Assumptions indicate that managers can enhance their knowledge and experience to observe opportunities and threats; hold these opportunities; and reshape the organization's resources, capabilities, and structures. Based on the conclusions of (Teece, 2012), the "micro-foundation" of dynamic capabilities can be recognized as

1. the capacity to observe organizational opportunities and threats;
2. to hold opportunities through the selection of possible practices; to invest and deploy resources; and
3. identifying and transforming the resources and capabilities of the organization.

On the other hand, there is another point of view about dynamic managerial capabilities, which refers to "the ability of senior managers to ensure learning, integration, and reconfiguration and transformation when needed, all designed to perceive and seize opportunities" (Fallonbyrne & Harney, 2017). The supporters of this point of view ensure that learning and knowledge are the main pillars on which dynamic managerial capabilities can be established.

A third group alleges that dynamic managerial capabilities can be “the ability or skill that managers continually organize resources into bundles to extract more value from the pool of enterprise resources” (Mika, 2017). Supporters of this group suggest that continuity is a major concept that enables dynamic managerial capabilities.

It can also be suggested that dynamic managerial capabilities refer to “the ability of an organization to change to either initiate or respond to transformations in its external environment” (Kevill et al., 2021).

There is an agreement that when organizations are willing to gain a competitive advantage, they not only depend on the dynamic managerial capabilities, which are considered an intangible asset possessed by the management individuals and flow automatically. Rather, they pay too much attention to the practices that underpin each managerial capability. Now companies believe more and follow Helfat and Peteraf’s (2003) lifecycle approach, indicating that regular enactment of a capability supports it and leads it to mature and create a state of stability. In some cases, it can lead to its impairment, becoming vulnerable to reduction, or, in some extreme cases, its disappearance. The lifecycle approach also assumes that exogenous and endogenous forces can motivate capability evolution through redeployment, renewal, or recombination or can lead to retrenchment or retirement of the capability (Kevill et al., 2021).

2.2.5.2. Characteristics of dynamic managerial capabilities

Kevill et al. (2021) argue that once dynamic managerial capabilities mature and become embedded in the practices of organizations, they can be characterized by three main characteristics. These characteristics make the dynamic managerial capabilities identifiable within any organizational context. These

capabilities, as shown in table (1) below, entail having a change-oriented purpose that has strategic and economic significance for the organization (Shilke et al., 2018); they stand behind the repeatable change in the organization (Peteraf et al., 2013); and they have both routine and non-routine components (Mahringer & Renzl , 2018).

The following table (1) elaborates on the characteristics of dynamic managerial capabilities as defined by Kevill et al. (2021).

Chartrateristics	Explanation
Particular change-oriented objective that has strategic and economic significance	Every dynamic managerial capability possesses a particular functional objective, including development of novel products or services; acquisitions of organizations; or diversification. These Dynamic capabilities help change to take place effectively, strategically and economically (Widianto, et al, 2021).
Repeatable	Dynamic capabilities stand behind repeatable changes in the organization. For instance, when there is a dynamic capability that helps the organization to develop new services or products, the same capability is used for developing many other services. This means that thanks to the dynamic managerial capabilities, these changes are repeated (Helfat & Martin , 2015).
Routine and non-routine components	Dynamic managerial capabilities involve both routine and non-routine components. This means that those changes recognized through any

	dynamic managerial capability can be undertaken in various similar manners (Fainshmidt & Frazier , 2017).
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From the explanations of the three characteristics in the table above, it is identified that the first characteristics indicate that dynamic capabilities are "change-oriented". In this context, change is a pivotal issue for the concept and plays a critical role in differentiating "dynamic capabilities" from those "operational capabilities" that help organizations to undertake their major functional practices. The notion that dynamic capabilities guide change to appear in its best manner is well-established. At the same time, this notion is enhanced by the outcomes of many empirical studies (Shilke et al., 2018). However, in line with this argument, while these dynamic capabilities are behind change if enacted, they are still latent if not fully exploited to address the strategic business environment. In addition, the influence of dynamic capabilities on effective change is possibly opposed by some obstacles resulting from inadequate cognitive introductions to the requirement to change; the good approach to change; and the organization's external environment (Afshari et al., 2020).

Concerning the second and third characteristics mentioned above in Table 1, which are the repeatable change and routine nature of dynamic capabilities, there is a debate between reviewers concerning the two. This debate results from the nature of the dynamic capabilities that include repeatable actions that can be understood as routine actions. Parmigiani et al. (2011) defines routines as "repetitive patterns of interdependent organizational actions," which means that these dynamic

managerial capabilities include common practices. Such practices are undertaken repeatedly. Even though some reviewers consider dynamic capabilities amongst those highly patterned and routinely occurring practices, there is evidence that these practices involve some level of improvisation, some non-routine components emerging from individual differences, and some contextual considerations (Bingham et al., 2015). It is argued that dynamic capabilities involve creativity in addition to entrepreneurial and non-routine behaviors that exist alongside those routine behaviors.

2.2.6. Underpinnings of dynamic managerial capabilities

The literature about dynamic managerial capabilities ensures that these capabilities are founded on a set of underlying managerial resources. These resources include managerial cognition resources, organizational social capital resources, and organizational human capital resources (Helfat & Martin, 2015). Such resources stand behind patterned managerial intentionality, deliberation, decision-making, and practice issues. The aforementioned managerial resources underpin managerial capabilities. These capabilities support the current operations known as “managerial and operational capabilities”. Nevertheless, the major concern here is the emotional issues of such managerial capabilities and how many organizational resources help managers influence strategic change more than any other issue in the wide range of literature that addresses managerial cognition, social capital, and human capital.

2.2.6.1. Managerial cognition

Eggers & Kaplan (2013) ensure that managerial cognition comprises mental models and beliefs. Mental models and beliefs are also known as “knowledge structures”. Other reviewers suggest managerial cognition involves mental processes and emotions (Hodgkinson & Healey, 2011). Having identified that managers are

confronted with huge amounts of data, it is accepted that those managers use some “knowledge structures” to introduce their recognition of this data to the world. Such knowledge structures affect managers’ biases and heuristics that contribute to predicting any changes in the market, recognizing the implementations of the multiple choices, and finally taking action (Ting et al., 2021).

Managers face obstacles in transferring their knowledge structures from one context to another. It is also argued that some managers can create links amongst knowledge structures in various contexts in a way that helps them feel cognitively distant yet superior to market opportunities. Furthermore, previous studies indicate that once a manager faces change in a source context, his/her ability to transfer knowledge to different contexts is maximized through previous experience. Managers who have worked in changing markets and organizations can improve knowledge structures they can use in numerous contexts (Vrontis et al., 2021).

Chung & Yoon (2020) assume that mental processes and emotions are the underpinnings of dynamic managerial capabilities. Mental processes can also be recognized as “mental activities” and/or “managerial cognitive capability”. Kamasak et al. (2019) defined *mental processes* as “the capacity of an individual manager to perform one or more of the mental activities that comprise cognition”. Mental processes are agreed to act as a critical pillar of dynamic managerial capabilities. Such mental activities involve attention and perception, reasoning and problem solving, language and communication, and more

2.2.6.2. Managerial social capital

Hom et al. (2019) ensure that managerial social capital comprises goodwill derived from relationships between managers and followers. These relationships can be formal or informal. These enable them to get the resources and information they need. Building on this, both formal and informal networks in

organizations help managers collect information that they expect to help them recognize all the available novel opportunities. For instance, those managers who are in brokerage situations and consequently link the employees in various networks within and across organizations can get more diverse information, which, in turn, can simplify the processes of environmental scanning as well as any related recognition of novel opportunities.

There are assumptions that managerial social capital may support dynamic managerial capabilities for reconfiguring and capturing any opportunity. For instance, social relations in the external business environment represent a major source for accessing resources. These resources include skilled people ready to fund projects and the resources required to capture investment opportunities. Some positions in the internal social network seem to be quite advantageous. For example, the position of centrality is expected to grant power over the available resources that help capture opportunities. Likewise, both the internal power and the impacts derived from social capital can probably facilitate shifting employees between positions, changing the organizational structure, and the physical assets included in the reconfiguration process. Therefore, when discussing social capital and dynamic capabilities together, it is argued that "organizations are not expected to" acquire, reconstruct, and produce resources without the social capital of individuals" (Corrêa et al., 2019).

2.2.6.3. Managerial human capital.

One globally accepted definition of human capital is "learned skills and knowledge that individuals develop through prior experience, training, and education" (Helfat & Martin , 2015). The latest reviews about managerial human capital tended to expand the concept to include knowledge as well as skills, in

addition to psychological attributes of cognitive ability, "general intelligence," and some other abilities that involved "personality, values, and interests" of the employees, known as "KSAOs". Ployhart & Moliterno (2011) define "knowledge, skills, [cognitive] ability, and other abilities".

Some writings about dynamic managerial capabilities (Ringov, 2013) preferred to separate human capital from cognition and related abilities and cast light on their interrelationships. The major reason behind using the concept of "human capital" is to refer to the key features that human capital has, such as knowledge, education, experience, and skills" (Wright, Coff, & Moliterno, 2014). Some managerial human capital is confined to specific teams, units, functional areas, technologies, organizations, and business sectors, while other knowledge is generic. (Kevill et al., 2021). There is no doubt that the different types of human capital do ultimately benefit organizations. There is no need for human capital to be firm-specific to make the best use of them.

In order to recognize the available opportunities and threats, capture them, reconfigure the organization's resources, and restructure the positions, managers have to depend on their knowledge and expertise. In case managers have various functional areas, technological, industry-specific, and firm-specific expertise, they are expected to be different regarding their absorptive capacity regarding the numerous sorts of data. Thus, they are expected to differ concerning the opportunities that they recognize. Concerning the function of capturing opportunities as "dynamic managerial capability", managers can be different in terms of their ability to invest and other commitments due to these differences in their learned expertise (Huynh et al., 2022).

In the dynamic managerial capabilities literature, there is evidence that individual managers' human capital includes teams of managers, which stands

behind some points to be considered regarding unit-level managerial human capital at a team level. In addition, this suggests that "complementarities between team members in their human capital may have a positive impact on firm performance" (Wright et al., 2014).

2.3. The relationship between managerial dynamic capabilities and knowledge management

An investigation of the available literature about the influence of managerial capabilities shows a shortage of previous research that addressed the relationship between the two variables. However, one of the most recent studies that addressed this relationship is the study of Chen et al. (2022), in which the authors investigated the effect of data-driven dynamic capabilities on knowledge management. The major focus of this research was on tacit knowledge. The study was based on a comprehensive theoretical literature review. The data was collected from an in-depth literature review that addressed dynamic managerial capabilities and knowledge management. The authors proposed three dimensions of "institutional environment—organizational innovation—executive/individual cognition" and examined their effects on dynamic capabilities. The research was established on two theories to explain the relationship between the variables from a theoretical perspective. When applied in a data-driven context, these are the knowledge-hiding theory and the dynamic capabilities theory. Based on the literature review, the authors proposed that establishing dynamic capabilities is useful for managers to capture and share knowledge in an organizational context.

2.3.1. knowledge-based theory and the relationship between managerial dynamic capabilities and knowledge management

Having gone through the theories that explain dynamic management capabilities and knowledge management within business organizations, it can be

assumed that the knowledge-based theory can better explain the relationship between dynamic management capabilities and knowledge management. There is an agreement that the knowledge-based theory for business organizations focuses on “knowledge” and considers it the most important and strategic component of any organization (Abuaddous et al., 2018).

The significance of knowledge stems from the fact that management needs the knowledge to enhance their capabilities. Without knowledge, their capabilities will not benefit the organizations (Ahmed, 2017). In addition, knowledge acquisition, knowledge storage; knowledge sharing; and knowledge implementation as the four major processes of knowledge management are established on the effectiveness of the available knowledge for the management and the dynamic capabilities of acquiring, storing, sharing, and implementing this knowledge. Managers are highly recommended to dynamically demonstrate knowledge through specific capabilities to manage this knowledge best (Ahhabi et al., 2019).

Despite the essentiality of the knowledge-based theory for organizations to enhance dynamic managerial capabilities and knowledge management, there are some proponents of this theory. They allege that “knowledge-based resources are often difficult to imitate and entail some complexities, especially those social ones. Heterogeneous knowledge bases and capabilities among organizations are the major determinants of sustained competitive advantage and superior corporate performance” (Elmorshidy, 2018).

2.3.2. Knowledge-based theory and managerial capabilities

The knowledge-based theory indicates that numerous managerial capabilities are established in light of the information technologies applied within the organization and the know-how practices, which means that managerial

capabilities do not fall from heaven but are generated from specific activities that create value within the organization. These activities usually involve search, learning, R & D, and managerially directed asset orchestration processes (Teece, 2012). Further, the nature of knowledge in an organization impacts the processes of making value. The theory ensures that many other elements impact the effectiveness of managerial capabilities. These include organizations' complementary assets; the intellectual property regime, organizations' engagement with standards development activities; the applied business model; and the investment decisions' timing (Genakos et al., 2012).

Dynamic capabilities, according to the knowledge-based theory, are dynamic and traditional capabilities. The theory shows that dynamic capabilities can be observed within individual managers, particularly those in top management (Curado & Vieira, 2019). Those managers are always required to play particular roles through which they are more likely to identify and exploit opportunities. Traditional capabilities need some asset orchestration, which means that traditional capabilities require combinations and integration and include the capabilities of the CEO and the top management team to identify the most important developments to be applied in the organization, formulate a response, and guide the entire organization on its route ahead (Abker et al., 2019). However, the values of the organization, its culture, and its collective capabilities to quickly apply new business models or to apply any other shifts are also integral to the strength or weakness of the organization's dynamic capabilities (Chen et al., 2016).

The knowledge-based theory shows that dynamic managerial capabilities are expected to enable the organization to recognize why intangible assets involving the organization's collective knowledge and capabilities represent the most precious assets in today's industries. It is suggested that knowledge and

capabilities, in addition to other intangibles, are not only scarce; they are often difficult to imitate (Bucci & El-Diraby, 2018).

There is empirical evidence from the study of (Di Stefano Pe et al., 2010) that capabilities can be if traditional is bought; dynamic capabilities are the ones to be ‘built’ through a process of investment in discovery, knowledge generation and learning (Teece, 2017). One of the most well-known examples concerning this is the case of Apple, whose CEO Tim Cook (2013) declared that the capability of Apple and its managers to integrate hardware, software and services is not easy. It is a fact that Apple’s managers possess the ability to innovate in different spheres, but they are not able to create magic. Making a shift in the dynamic capabilities of any organization needs decades to be carried out.

2.3.3. The relationship between Knowledge acquisition, storage, sharing, and implementation dynamic managerial capabilities according to the knowledge-based theory

Chiu & Chen (2016) indicates that knowledge-based theory ensures that knowledge is considered as an embedded issue that is transformed via numerous entities that involve the culture of the organization as well as its identity; the documents of the organization; the applied policies within this organizations; the daily routines; the applied systems; and the employees of the organization. This strategic management point of view is established upon and expands the resource-based perspective of the business organizations (RBV), which Penrose initially presented (1959) and later extended by some other researchers, including (Wernerfelt 1984; Barney 1991; and Conner 1991).

The theory states that one of the most significant tasks managers have to undertake is to accumulate knowledge, protect it, and manage it in the best manner. Managing the organization's knowledge is one of the managers' most

important capabilities (Nickerson & Zenger, 2004). When managers demonstrate the organizational knowledge resources, they can define the organization's ability to enhance its performance and productivity. It is assumed that the most important question related to implementing the knowledge-based theory concerning managerial capabilities and innovation within an organization is not "how are developed capabilities exploited?" but rather "how are developed capabilities efficiently generated in the organization?". Researchers and reviewers in the knowledge domain of innovation and managerial capabilities concentrated on finding answers to this question (Dincer, 2017).

Based on the discussion above, it can be hypothesized that:

H1: There is a significant impact of knowledge management on dynamic managerial capabilities.

2.3.3.1. Knowledge acquisition and dynamic managerial capabilities:

One of the most critical capabilities managers must possess the ability to obtain knowledge from internal and external sources. Organizations' social capital and human capital are valuable sources of knowledge. In order to acquire knowledge effectively, many other assets need to be effectively exploited by managers. Making the best use of the available assets for knowledge acquisition is one of the most significant dynamic managerial capabilities (Pinho et al., 2012). According to Michal and Bohuslava (2017), knowledge acquisition refers to the organizational activities through which knowledge is collected through extra-organizational sources. There are suggestions that external networks and collaborative processes are significant sources of this knowledge acquisition (Wilfredo et al., 2013).

According to the knowledge-based theory, one of the most effective sources of knowledge is the technological assets possessed by the organization and the technological assets from external sources. According to the theory, technology can be described as a pivotal component of the structural dimension required to mobilize social capital and motivate this capital to create knowledge. Furthermore, technological dimensions are recognized as an effective component in the entire knowledge Management processs and knowledge acquisition. Technology usage is a capability of management through which business intelligence is increased; collaborative work is enhanced; learning is effectively distributed; knowledge is better discovered; knowledge is appropriately mapped, and better opportunities are generated and secured. Aino et al. (2018) assume that information technology can always be cited in the knowledge management literature as a significant component of the knowledge management infrastructure that helps and enhances the pivotal knowledge practices that involve knowledge creation, distribution, and application.

Based on the discussion above, it can be hypothesized that

H1 (a): There is a significant impact of knowledge acquisition on dynamic managerial capabilities.

2.3.3.2. Knowledge storage and dynamic managerial capabilities

Based on the conclusions of (Micha & Bohuslava, 2017), knowledge management generally represents a dynamic and nonstop set of processes and activities that are enhanced and supported through training the employees in the organization. Individual employees and teams of any organization can be integrated into the knowledge Management processses or sequence of activities. One of these activities is knowledge storage (Bianchi et al., 2022).

The knowledge-based theory ensures that knowledge storage is a major managerial capability with a high significance level since it enables managers to manipulate knowledge created and acquired in the organization. When managers succeed in storing the acquired knowledge in the form of standard operating procedures and routines, they are thus demonstrating knowledge storage.

Another significant managerial capability that is related to knowledge storage is knowledge codification. The codification as a process that proceeds the storage phase of knowledge lets managers be able to re-use and integrate knowledge (Bhanu , et al., 2016). The knowledge-based theory ensures that knowledge codification and storage are dynamic managerial capabilities. When possessed properly, managers are expected to undertake various activities, including codifying tacit knowledge into explicit knowledge, then storing this documented knowledge and providing up-to-date documented knowledge to others in the organization (Darraj, 2020).

There is an agreement that knowledge storage relies on an organization's information technology assets. Using these information technologies in the knowledge storage process is a unique managerial capability that ultimately motivates the employees to use the stored knowledge in later phases, especially explicit knowledge that is codified and stored in company systems and documents (Aino et al., 2018).

Based on the discussion above, it can be hypothesized that

H1 (b): There is a significant impact of knowledge storage on dynamic managerial capabilities.

2.3.3.3. Knowledge sharing and dynamic managerial capabilities

There is empirical evidence from previous research for the significance of knowledge sharing and the extent to which knowledge sharing contributes to an organization's survival and ability to gain competitive advantage (Eaves , 2014). The exploitation of collective knowledge is a managerial capability that enables managers to make the best use of expert opinion that is obtained through knowledge sharing and that contributes to improving the efficiency of the managers in some business domains such as problem-solving, task accomplishment, and decision-making, which, in turn, results in improved employee performance (Zhu, 2016).

Various contextual factors can influence what knowledge sharing can do and what it enhances as a capability of the managers. To explain, when managers have an offensive supervision style and lack adequate management support, their ability to positively influence knowledge sharing decreases (Kim & Yun, 2015). In addition, managers' specific personality traits as their education level, can exist behind contextual conditions that have influenced the organization's performance in general (Henttonen, et al., 2016) employees' self-efficacy (Kim & Yun, 2015); and employees' ambition.

Based on the discussion above, it can be hypothesized that

H1 (c): There is a significant impact of knowledge sharing on dynamic managerial capabilities.

2.3.3.4. Knowledge implementation and dynamic managerial capabilities

Alyoubi et al. (2018) explained that knowledge implementation involves activities linked to managing employees' intentions to turnover. It is also linked to reducing the loss of expert knowledge. Such expert knowledge represents a key strategic resource for organizations. The knowledge-based theory ensures that expert knowledge grows more likely to be lost in case of employees retire or quit the organization. When managers possess the capability of knowledge implementation, they can minimize retirement rates; increases the rates of attracting and maintaining the best employees, which are explained in light of the dynamic managerial capability to retain and implement knowledge (Talukder et al., 2014)

Based on the discussion above, it can be hypothesized that

H1 (d): There is a significant impact of knowledge implementation on dynamic managerial capabilities.

2.4. Previous Research:

The study of (Kaur, 2023) aimed to assess the relationship between knowledge management and dynamic capabilities domains. A literature analysis was conducted. It was concluded that knowledge management process and dynamic capabilities have a two-way impact.

The study of (Ul-Durar, Awan, Varma, & Memon, 2023) aimed to assess the relationship between underestimated elements of knowledge dynamics and dynamic capabilities. A systematic literature review was carried out. It was

concluded that there is an identical relationship between underestimated elements of knowledge dynamics and dynamic capabilities in different sectors.

The study of (Valeri, 2023) explored how knowledge management in small businesses can be mapped and how future actions can be adopted to strengthen managerial practices. A systematic literature was conducted through 686 articles about KM in small businesses. The findings ensured that there exist five major themes in knowledge management research for small businesses.

The study of (Jabeen & Al Dari, 2023) aimed to present a clear understanding of knowledge management processes and efforts in different organizations. The study analyzed the relationship between knowledge management benefits and knowledge management capabilities, human resources practices that enhance knowledge sharing, and organisational learning. It was concluded that knowledge management capabilities, intrinsic motivation, and organisational learning were useful in positively improving KM. Also, organisational learning had a mediating effect between knowledge management capabilities, extrinsic motivation, intrinsic motivation, ability-enhancing human resources practices, and KM.

2.5. Research gap:

The literature review conducted in this research show that there is a shortage in the previous research that correlated knowledge management processes and managerial capabilities in the telecommunication sector in Bahrain.

2.4. Theoretical framework

Even though the resource-based theory for business organizations focuses on the significant roles played by knowledge management within

organizations to enhance the dynamic managerial capabilities in order to reach the desired competitive edge and locate the organization in a good competitive position, proponents of the knowledge-based theory think that "the knowledge-based theory does not go far enough" (O'Reilly & Tushman , 2016). Their opposition to the theory is based on a claim stating that "the research-based knowledge theory addresses knowledge as a generic resource, instead of possessing particular features" (Bucci & El-Diraby, 2018). This means that the theory cannot differentiate between the different kinds of knowledge-based capabilities. Information technologies can positively contribute to the knowledge-based view of the organization when information systems are employed to synthesize, support, and expedite the organization's knowledge management capabilities through the management (Teece, 2017).

Whether or not the Knowledge-based theory of the firm actually constitutes a theory has been the subject of considerable debate. According to one notable proponent of the knowledge-based view of the firm (KBV), "The emerging knowledge-based view of the firm is not a theory of the firm in any formal sense" (Elmorshidy, 2018).

Based on the discussion above in section 2.3, the following theoretical framework is proposed to show how previous research and the knowledge-based theory relate knowledge management and its components to dynamic managerial capabilities. The following that the researcher designs show this relationship:

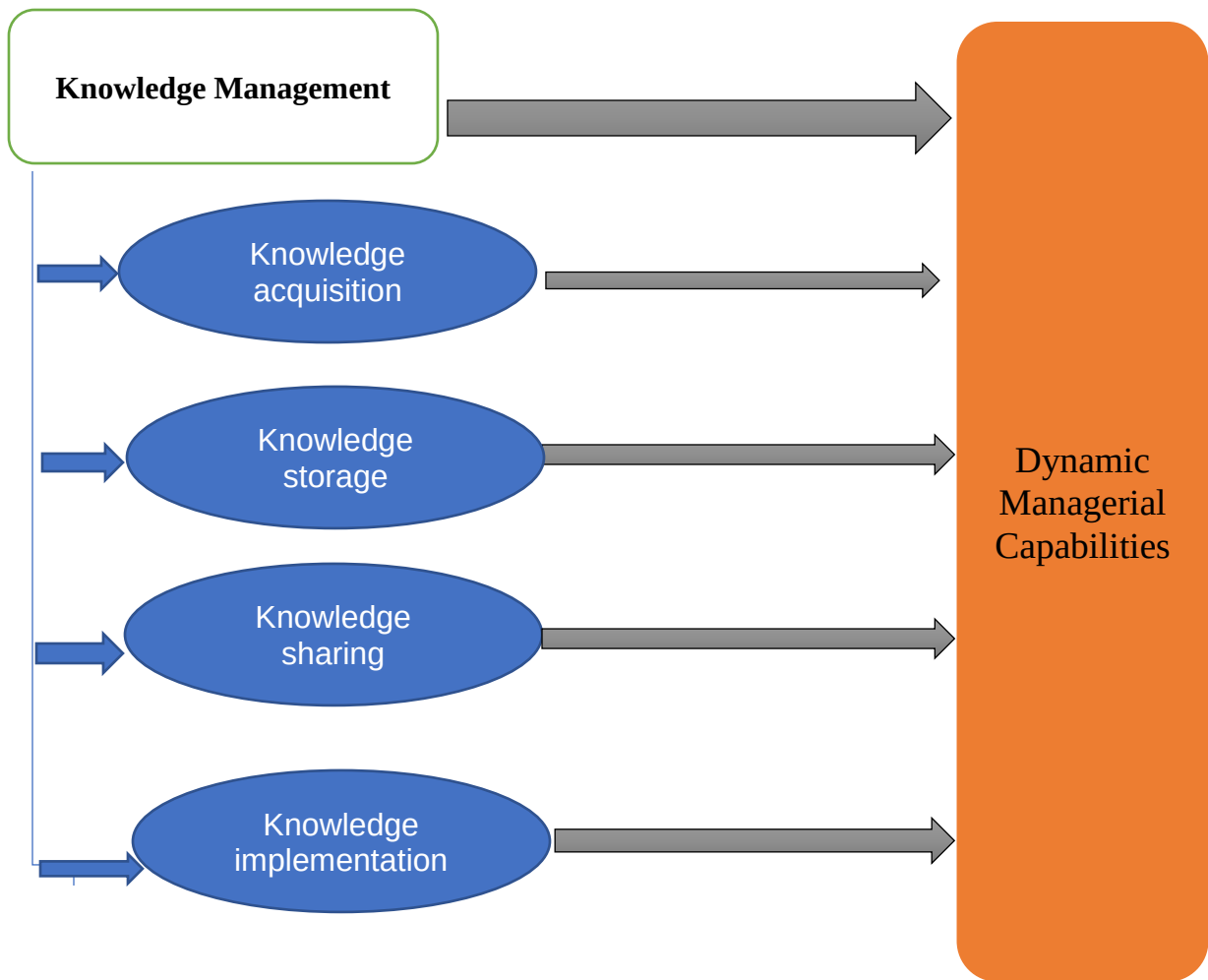


Figure 1 Theoretical framework

2.6. Summary

The second chapter has been dedicated to the presentation of the literature review section. This section is of great significance within the fundamental research. Its significance stems from the roles it plays both for the researcher and the readers. For the researcher, investigating the available literature about the two variables and the relationship between them provides the researcher with the appropriate background about the topic and the related variables. The researcher

grows more likely to demonstrate better knowledge about the variables and the link between them. Also, the researcher finds out about the latest improvements in the knowledge domain of the research. In addition, the researcher learns exactly where other researchers stopped in their study concerning the relationship between the two variables. Concerning the readers, this chapter provides them with a suitable background about the research topics. In this chapter, the researcher concentrated on presenting arguments about researchers about the variables and the effectiveness of the relationship between them.

Chapter Three

Methods and Procedures

Chapter Three: Methods and Procedures

3.1. Introduction

It is assumed that the research methodology section is an important component of any research paper. The key reason for the significance of this chapter is that it plays an outstanding role in making the audience for whom the research is prepared to understand how it is conducted. Assumptions ensure that the section that presents the research methodology is regarded as a catalyst that transforms the readers from a purely theoretical section, which is the 2nd chapter, to another section that is empirical in nature and content, which is the 4th chapter. Research methods can be considered a scheme is showing how the research is conducted. Some methodologists consider it "*a systematic plan for conducting research.*" (Brains, et al., 2011).

It is accepted that social researchers often apply numerous methods in conducting their research papers. The most well-known and widely applied methods are the qualitative, the quantitative, and a mixture of qualitative and quantitative methods. Once the researcher decides to use any of these methods, they can employ observations, surveys, or gather secondary data to fulfil the research's purpose. For one thing, if the quantitative approach is employed, the researcher needs to categorize and count the main features that distinguish his/her population or the collected data about his/her topic under research. This researcher has to produce statistical models through which the proposed hypotheses can be tested, and the observations can be explained. However, on the other hand, the most special purpose for using the qualitative methods compared to the quantitative method is the researcher's willingness to produce detailed descriptions of the observations collected that involve the context of events and circumstances.

In the 3rd chapter of the present research project that casts light on the impact of knowledge management on dynamic managerial capabilities in STC Bahrain, as one of the communication sector companies in Bahrain, the researcher introduces her readers to the main reasons that support each methodological decision. The methodological decisions that are made in this chapter include research design, approach, instruments, sampling technique, and data analysis procedures. In addition, the instrument's design and the questionnaire items' sources are shown in this chapter. This chapter's pivotal issues are the conceptual model and the research hypotheses.

3.2 Research Problem

The present research investigates the impact of knowledge management on dynamic managerial capabilities in the communication sector in Bahrain. The organization to which the research is applied is STC Bahrain. There is no doubt that the communications and information technology sectors are the main pillars in this era for the progress and success of countries. The government of the Kingdom of Bahrain pays due attention to the information and communications technology sector in all its forms. This is because the information and communications technology sector is witnessing tremendous development in the Kingdom by relying on the latest communication and information technologies. Thanks to the use of ICT providers, the services apply the latest knowledge in this field in a way that serves the citizen in the first place and is reflected in the status of the Kingdom of Bahrain.

The Ministry of Transport and Communications and the Bahrain Telecommunications Regulatory Authority are making great efforts on the ground to launch the technologies of the “5th generation” networks and develop the sector fully through the implementation of the Fourth National Telecommunications Plan (Al-Rumaihi, 2018).

Venter (2022) Ensure that it has become clear to specialists that investment in technology is going up steadily in the Kingdom of Bahrain. This has been evident through the initiatives and legislation that are constantly issued. These achievements in the telecommunication sector are employed in the Kingdom to make more advancements in the region. One of these advancements is adopting the “cloud first” policy, which involves many solutions provided by this technology that can fundamentally change government operations in the Kingdom of Bahrain and save expenses. The Information and eGovernment Authority estimates in 2021 proved that the government had saved about 60%-90% of the expenses of establishing the IT infrastructure.

Three companies operate in the telecommunications sector in the Kingdom of Bahrain. Their work is regulated by Communications Law No. 48 of 2008 and its amendments. Licenses are granted to companies operating in this sector through Article (24) of the law, which states that “the operator of the public telecommunications network that provides telecommunications services requires a license.” Articles (29) and (30) of the same law specify mechanisms for providing licenses for individuals or institutions. The Licensing Department of the Communications Regulatory Authority of the Kingdom of Bahrain is responsible for providing licenses and ensuring compliance with the applicable licensing conditions.

STC Bahrain was established under VIVA Bahrain in 2009 and is owned by the Saudi Telecom Group and the Commercial Services Company. The company was known as VIVA Bahrain until December 2019. It is the third Bahraini telecommunications company to obtain a mobile phone network license from the Telecommunications Regulatory Authority in Bahrain. The company name changed to STC Bahrain in 2019. The total number of employees at STC is 474.

3.3. Research Strategy

The current research exploits the quantitative research strategy. This strategy aims to fulfill the determined objectives by assessing the impact of knowledge management on dynamic managerial capabilities. The strategies selected by the researcher to apply in the present study mainly depend on what the researcher thinks fits the purpose and nature of the study. It is accepted that no one strategy can be said to be adequate while others are not, so the researcher's point of view about strategies adequacy is the criterion for selecting the research strategy. When there are two alternatives to choose from, the researcher selects the one that goes along with the purpose and nature of the study.

In the present research that assesses the impact of knowledge management on dynamic managerial capabilities, the survey was selected to be the instrument that is circulated to a sample of STC employees. The survey is made up of statements to which the respondents have to show their level of agreement on each statement included in the survey according to a scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The scale is based on the 5-point Likert Scale. SPSS analyzes the collected data to reach these findings. The following figure (1) explains the processes of conducting the present research.

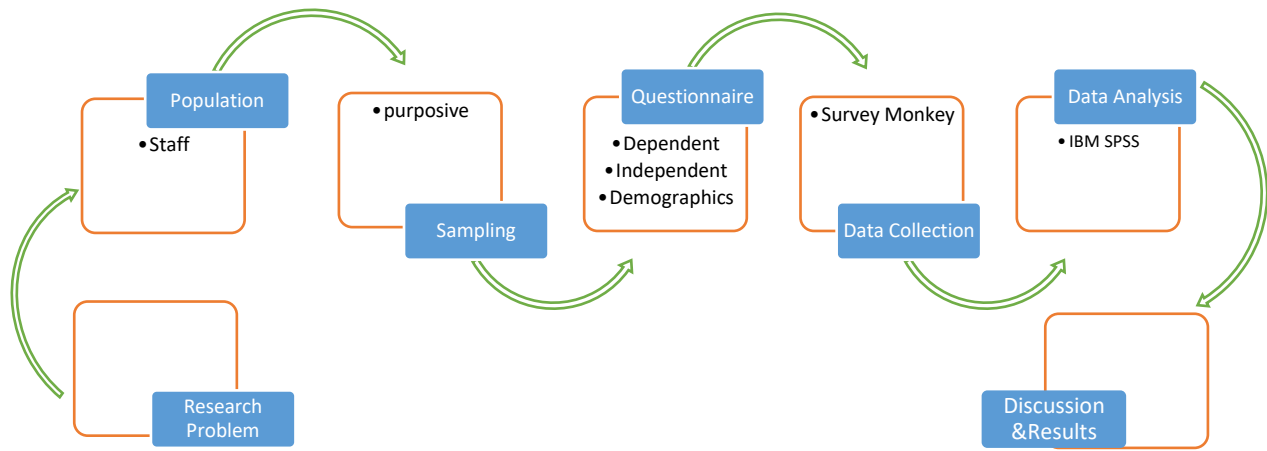


Figure 2: Research strategy

3.4. Research design

One of the most widely accepted definitions of research design is "*that group of methods and procedures exploited in gathering and analyzing measures of the variables determined by the research problem*" (Jalil, 2013). The most notable thing about the research design is that it drives researchers to decide on the type of research they would pursue descriptive or correlation. Deciding on the research objectives is one of the most critical steps that must be taken before selecting the type of research design. The three research design types mostly employed include: casual, descriptive, and exploratory.

One important basis for deciding on a suitable research design is alleged to be the researcher's identification of the degree of uncertainty about the research environment. This means that the exploratory design is consistent once the researcher recognizes that he/she is very uncertain about the problem and questions

of the research. This is understood because the exploratory design reduces the degree of uncertainty. However, when the researcher thinks he/she is aware of the problem and questions that suit the topic under research, the most suitable design type is descriptive. The simple design is supposed to go along with the research topics in which researchers have sufficient knowledge about the causes and effects that explain the phenomenon under research. This gives those researchers sufficient capacity to collect data through surveys. (Bryman & Bell, 2015).

Following the above, and as the current research is determined to explore the impact of knowledge management on dynamic managerial capabilities in the communication sector in Bahrain, the researcher was able to select the descriptive and casual design types to apply.

Initially, the researcher found the descriptive research design too appropriate for the purpose and nature of this research. Descriptive research was defined from different perspectives; nevertheless, all of these definitions are described as descriptive. One definition refers to it as *"the design that enables researchers to describe specific behavior as it occurs in the environment"* (Creswell, 2012). Some researchers consider descriptive research as *"a design type planned mainly to describe, explain, and interpret phenomena under research"* (National Science Foundation, 2014). This design does not involve answers to questions such as "how," "when," or "why." Rather, it drives researchers towards answering the question of "what". This involves what features the population has or what features the decoded data has. The population can be described in terms of gender, age, positions, education level, experience, etc.

The simple research design is the second type that is employed herein. According to the name, causal research is “*an examination of the cause-and-effect relationships between variables*” (Brains, et al., 2011). This type is always selected when the researcher is keen on employing statistical methods to identify evidence for the cause-effect relationships between the research investigated variables (DJS Research, 2014). In this research, the researcher decided on a simple research design so that she could investigate whether or not causality can be found amongst the variables. By implementing this type of causal design, the deviation factor in one or more variables can be identified. It is a highly significant design, but it is not very easy. This complexity can be recognized due to the increasing uncertainty that confronts researchers (Brains, et al., 2011).

3.5. Research approach

The decision to select an adequate approach is as significant as the decision to select the research design. Both are related to each other. Methodologists determine that the approach chosen is, to a great extent, reliant on the design choice. A research approach is “those plans and procedures that span steps from broad assumptions to detailed methods of data collection, analysis, and interpretation.” (Sudeshna & Datt, 2016).

The quantitative and qualitative research approaches are the most widely applied. However, some researchers are willing to combine them to achieve more precise and verifiable outcomes. Selection from quantitative, qualitative, or a mixture of both requires more than receiving a recommendation from a colleague. The researcher needs to be familiar with using it (Creswell, 2012).

The quantitative research approach seems to the researcher as the most adequate for the purpose and nature of the research. The approach is "*the systematic empirical investigation of observable phenomena via statistical, mathematical, or computational techniques*" (Bryman & Bell, 2015). It was selected for this research due to its various positive points. For one thing, researchers employing this approach are more likely to obtain statistically significant outcomes about the topic under research and the tested hypotheses. The sample is regarded as a representative one for the entire population. Another thing is the state of compliance between the descriptive and causal research designs on the one hand and the quantitative approach on the other (Creswell, 2012).

The quantitative approach was also selected for this research as it is characterized by a high degree of reliability originating from the minimized subjectivity of implementing this approach. Furthermore, implementing the quantitative leads to a reduction in the complexity of the tested variables. The relationships between variables are precisely measured, and the hypotheses are properly tested. It also leads researchers to determine whether their findings comply with the existing theories and models (Saunders, et al., 2012).

3.6. Research philosophy

It is assumed that positivism represents an adequate philosophy consistent with the descriptive research type (Acaps, 2012). There is an agreement that positivism is dependent on the hypothetico-deductive method that helps researchers examine hypotheses that are priorly stated in the research quantitatively. Through this examination, functional relationships are expected to be derived amongst causal and explanatory factors ("independent variables" and outcomes, "dependent variables" (Park et al., 2020).

The positivism philosophy is always selected by the nature and objectives of the research, in addition to finding out that previous studies in the same knowledge domain use this philosophy. In the case of the present study, some previous works (Abbas & Sasan, 2019) and (Bianchi et al., 2022) employed the positivist philosophy. This philosophy is in line with the purpose of the present research since quantifiable results are expected.

Positivism is also employed in the present research owing to having an atomistic, ontological view of the world as comprising discrete, observable elements and events that interact in an observable, determined and regular manner” (Collins, 2010). Furthermore, the researcher decided on this positivist philosophy as it helps researchers have a high level of data verification since it relies on sensitive data. This means that the collected data is based on empirical evidence, so positivism is based on empiricism (Cohen & Maldonado, 2007).

3.7. Research variables:

One definition that describes the concept of research variables' is "*any entity that can take on different values.*" There are independent variables, dependent variables, and control variables. The independent variable can be understood as "*a factor or phenomenon that causes or influences another associated factor or phenomenon called a dependent variable*" (Brains et al., 2011) while the dependent variable can be understood as "*the event studied and expected to change when the independent variable is changed.*" (Jebreen, 2012).

The research decided that the independent variable in this research is knowledge management. According to the available literature (Abualoush et al., 2018) and (Ahababi et al., 2019) the most widely repeated practices of KM include four. These are considered the sub-independent variables. These are knowledge acquisition and storage, knowledge sharing, and implementation. The dependent

variable is dynamic managerial capabilities. The control Variables: gender, age, education level, position, years of experience, nationality.

3.8. Conceptual model

In light of the abovementioned research variables, the following figure represents the researcher's anticipation of how the research variables can impact each other.

This figure is designed in accordance with the studies of (Abker et al., 2019; Abbas & Sa'gsan, 2019; Chiu & Chen, 2016; Elmorshidy, 2018; Amabile & Pratt, 2016; Hern'andez-Linares et al., 2020 ; and Popescu et al., 2020).

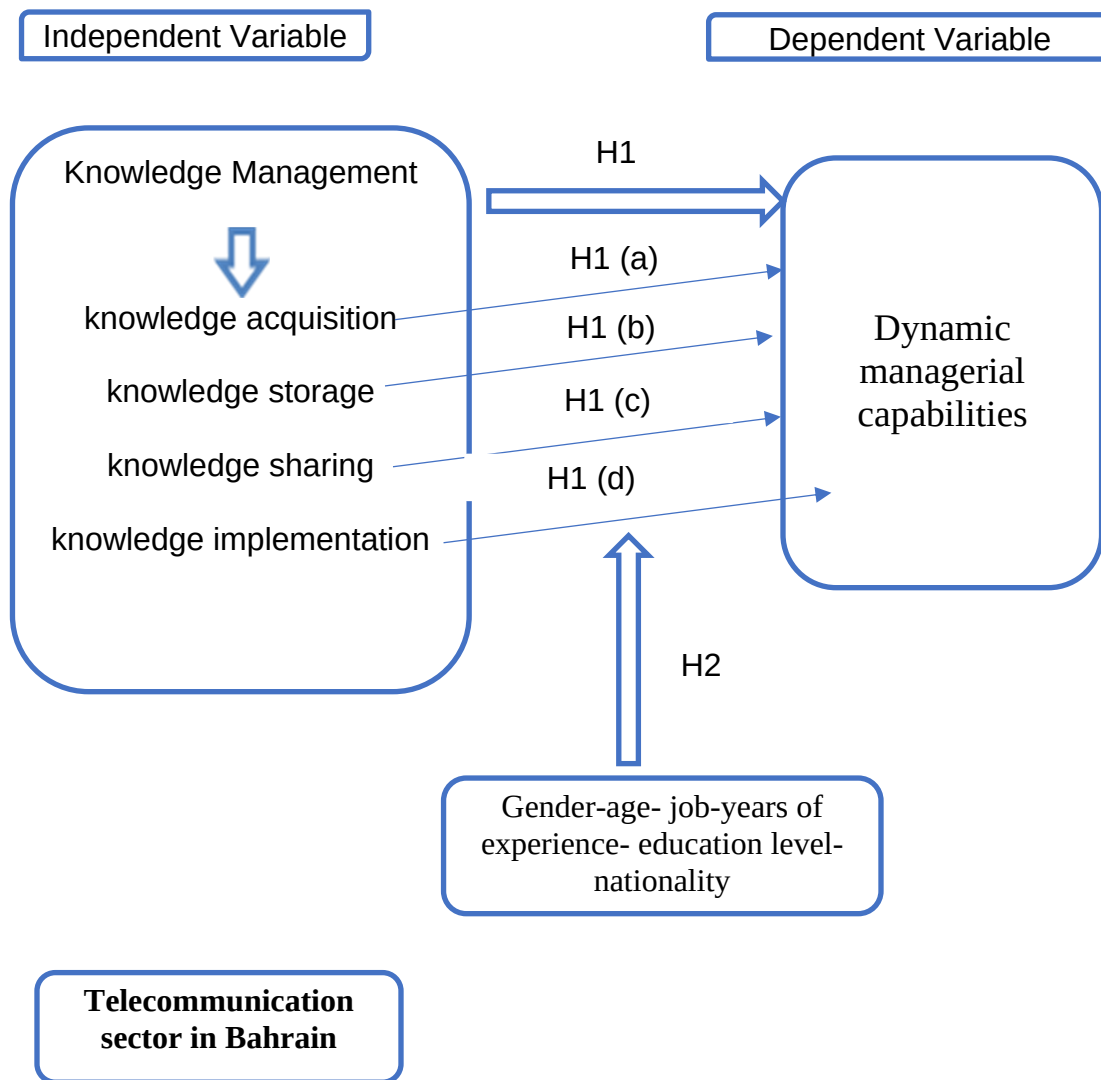


Figure 3 Conceptual model

The conceptual model above shows how the researcher perceives the relationship between the research variables. There are two variables. The independent variable is knowledge management. The dependent variable is dynamic managerial capabilities. Knowledge management as the independent variable is made up of four sub-variables according to prior research (Abualoush et al., 2018) and (Ahhabi, et al., 2019). According to the knowledge-based theory, the researcher expects that the independent variable and the four sub-variables will impact the dependent variable. Another thing that is perceived from the model is that the demographic variables are expected to create or not create a difference in the perception of the relationship between the independent and dependent variables.

3.9. Research Hypothesis

H1: There is a significant impact of knowledge management on dynamic managerial capabilities in STC Bahrain.

Four sub-research hypotheses are developed as follows:

H1 (a): There is a significant impact of knowledge acquisition on dynamic managerial capabilities in STC Bahrain.

H1 (b): There is a significant impact of knowledge storage on dynamic managerial capabilities in STC Bahrain.

H1 (c): There is a significant impact of knowledge sharing on dynamic managerial capabilities in STC Bahrain.

H1 (d): There is a significant impact of knowledge implementation on dynamic managerial capabilities in STC Bahrain?

H2: There is a significant difference concerning the recognition of knowledge management's impact on dynamic managerial capabilities in STC Bahrain, attributed

to the demographic variable (Gender, age, job, years of experience, education level, nationality).

3.10. Data collection Sources:

Two sources for data collection are used: primary and secondary.

3.10.1. Primary data:

Primary data is defined as "*data observed or collected directly from first-hand experience*" (Acaps, 2012). It presents the original data that exhibits the researcher's endeavor to add something new to the existing knowledge about the research topic. Multiple means can be employed for primary data collection, including self-administered surveys, interviews, field observation, and experiments. For this research, the questionnaire is the instrument for data collection. The most outstanding reason for depending on a questionnaire is its cost-effectiveness.

3.10.2. Secondary data:

The other type of data collected for this research is secondary data sources, also known as "*data that was collected by someone other than the user*" (Huff , 2016). The most favorable thing about using secondary data is that it is available, reliable, accessible, and inexpensive. Secondary data is often obtained from published and academic research, internet materials, media reports, and data taken from sector-specific monitoring reports.

3.11. Research Instrument

The researcher decided to use the questionnaire as the instrument through which primary data is collected. The questionnaire is the most appropriate instrument for this research because it seeks to collect quantified data that helps examine the research hypotheses. Some advantages support the researcher's decision to make use of the questionnaire. For one thing, it is the best instrument for data

collection within the least amount of time, effort, and funds. Questionnaires are also easily circulated, collected, and analyzed through software programs. This means that information technologies can be incorporated into collecting data via questionnaires. The researcher makes use of the Monkey surveys to circulate the questionnaire. This helps the researchers minimize the time spent circulating and collecting data and increases accuracy levels, especially in the decoding phase.

Furthermore, the questionnaire is accompanied by a high level of credibility because reduced levels of human intervention are granted. Quantification of the results takes place quickly and easily, especially with the use of software programs. The quantified data is easily compared and contrasted with other previous findings. Most of all, positivists claim that quantitative data is employed to introduce new theories and test existing hypotheses (Harlacher , 2016).

The Likert five-point item style is applied where each item has five responses ranked in the following order.

1	2	3	4	5
Strongly disagree	disagree	Neutral	Agree	Strongly agree

In this research, the questionnaire comprises two major sections: The first is dedicated to collecting demographic data about the sample of the individuals participating in the questionnaire. This includes gender, age, job years of experience, education level, and nationality. The second section is intended to collect data about research variables and sub-variables to answer the research questions and test the hypotheses. This section includes two main parts and sub-parts:

Part I: knowledge Management processs (20 items)

Knowledge acquisition

-Knowledge storage

-Knowledge sharing

-Knowledge implementation

Part II: Dynamic management (20 items)

Thus, the questionnaire is made up of 40 items.

3.11.1. Sources of the questionnaire items:

No	Items	Source
The independent variable: Knowledge management		
(A) Knowledge acquisition		
1	In my organization, there are various opportunities to acquire the needed knowledge.	(Abker et al., 2019)
2	Knowledge is provided in my organization via training on the job and out the job.	
3	My organization always seeks to support the employees' knowledge by providing them with the latest articles about their jobs' requirements.	
4	Employees are encouraged to study and gain more degrees by the management of my organization.	
5	My organization has short-term and long -term plans to enhance employee's knowledge.	
(B) Knowledge sharing		
6	There is a computerized system through which knowledge can be shared.	(Abbas & Saq̃gsan, 2019)
7	Distinct employees in sharing their knowledge are valued.	

8	Employees are encouraged to share what they know about work requirements.	
9	Employees who receive out-job training are required to hold meetings to share what they have acquired. Knowledge sharing is part and parcel of the company's culture.	
10	The ability to share knowledge is a component of the employees' performance appraisal.	
(C) Knowledge storage		
11	There are traditional and digital processes to create and store knowledge in my organization.	(Chiu & Chen, 2016)
12	There is an I-cloud storage capacity for whatever knowledge employees create and possess.	
13	knowledge that is stored online is accessible by all the employees in my organization.	
14	There are protective procedures for the knowledge stored online against any cyber-attacks.	
15	Employees' knowledge can be recalled at any time to be shared from the online sites.	
(D) Knowledge implementation		
16	Employees' knowledge is implemented for making change happen in my organization.	(Elmorshidy, 2018)
17	There are plans and instruments that grant systematical and adequate implementation of the employees' knowledge.	
18	Not only employees but also the leadership are involved in the knowledge implementation process.	
19	There is continuous feedback from my organization management regarding the knowledge implementation context.	
20	Everyone in my organization is involved in building a knowledge implementation map.	
The dependent variable: Dynamic Managerial capabilities		

1	My organization attracts and retains highly qualified and competent managers.	(Amabile & Pratt, 2016); (Hernández-Linares et al., 2020); and (Popescu et al., 2020)
2	Managers in my organization achieve better total control of the organization's general performance.	
3	The organization managers perceive new opportunities and potential threats.	
4	My managers develop and communicate the organization's purpose in a clear way to which all members can relate.	
5	My managers resolve conflicting opinions.	
6	Managers in my organization improve coordination and effective collaboration between key executives.	
7	Managers generate enthusiasm and motivate the high management unit sufficiently to achieve improved performance.	
8	My organization managers develop a system of strategic plans throughout the organization that is effective for the organization's general development.	
9	My managers develop training programs for the organization's members.	
10	The use of management by objectives has increased in the organization.	
11	The use of financial accountability reporting has increased.	
12	The participation of top and intermediate managers in the decision-making process has increased.	
13	The extensive, effective use of quantitative techniques in decision making has increased.	
14	The extensive, effective use of quantitative techniques in decision making has increased.	
15	The organization managers can address different types of challenges.	
16	My managers are able to deal with crises effectively.	

17	My managers demonstrate tacit and explicit knowledge.	
18	Managers in my organization are charismatic.	
19	Managers in my organization are able establish effective relationships with the employees.	
20	My organization managers are emotionally intelligent.	

3.12. Research population

One definition for the concept of population refers to it as "*a complete set of elements (persons or objects) that possess some common characteristic defined by the sampling criteria established by the researcher*" (Bryman & Bell, 2015). The population of the present research includes all the employees in STC Bahrain. The total number is 474.

3.13. Sampling Technique

One definition for the concept of a population refers to it as "*a complete set of elements (persons or objects) that possess some common characteristic defined by the sampling criteria established by the researcher*" (Casula et al., 2020). The population of the present research includes all the employees of STC Bahrain. The total number is 474.

3.11. Research Sample

One definition of the research sample is "*a subset of a population that is used to represent the entire group as a whole*" (Lance & Hattori, 2016). The sample is calculated via the finite population formula, which is

Finite population:
$$n' = \frac{n}{1 + \frac{z^2 \times \hat{p}(1-\hat{p})}{\varepsilon^2 N}}$$

where

z is the z score

ε is the margin of error

N is population size

p̂ is the population proportion

When the population size is 474, the margin of error is 5%, the confidence level is 95%, and the response distribution level is 50%. The sample will be 212.

3.12. Data analysis tools

For the data analysis process, the researcher uses SPSS V26, the "Statistical Packages for the Social Sciences." This package can be defined as "*that software package exploited for logical batched and non-batched statistical analysis*" (Bryman & Bell, 2015). SPSS is the most widely applied statistical software to achieve statistical analyses for the collected data. Through this software, the researcher makes use of the following tests:

3.12.1. Descriptive data analysis

3.12.1.1. Frequency tables: Frequencies and percentages are used to present the respondents' demographic data features.

3.12.1.2. Mean computation: Mean score values are computed to identify the status of the variable's implementation. Mean scores are considered central tendency measurements. The major purpose behind using them is often to provide descriptions of the center point of all responses or the average.

3.12.1.3. Standard deviation computation: Standard deviations are always computed to measure dispersion, which is frequently employed to describe the extent to which participants' responses are dispersed from the mean value (the center of the responses).

3.12.1.4. Graphical representation: The researcher presents charts for the demographic variables.

3.12.2. Inferential data analysis

To test the research hypotheses, inferential data analysis is employed. The statistical methods that would be performed to infer from this research sample to the studied population as a whole include the following:

3.12.2.1 .Bivariate significance tests: These statistical methods test the null hypothesis that there are no differences in a quantitative variable due to another categorical variable. For example, is there a difference in job security due to gender?

3.12.2.2 .The correlation test tests the linear association between two quantitative variables.

3.12.2.3. Regression analysis: the regression model estimates a linear line that models one dependent variable with one or more independent variables. The regression coefficient associated (and estimated) is interpreted as the effect of the independent variable on the dependent variable.

3.13. Ethical Issues

The ethicality of the present research can be discussed in terms of the following:

- **Confidentiality:** The researcher granted her participants confidentiality of the data they provided. This data is not being allowed to be explored by anyone who is not part of the work team.
- **Permission:** all the necessary permissions were taken before circulating and collecting data.
- **Informed consent:** The research entirely informed the participants about the procedures included in the research, and they were required to provide their consent to participate.

- **Anonymity:** To guarantee privacy, the researcher assured us that all the participants would be anonymous throughout the study, even the researchers.

3.14. Summary

The research methodology consists of both primary and secondary research phases. The primary research phase includes an empirical study using a questionnaire as a data collection technique. The secondary research phase includes gathering information from readily available sources such as journals, books, papers, and digital media such as online references.

The questionnaire was designed with the use of the Likert Scale. It consists of 40 items. The survey will be conducted on employees in the telecommunication sector in Bahrain (STC Bahrain). The third chapter paves the way for understanding how the research is conducted. The fourth chapter builds on what was introduced in this chapter.

Chapter 4

Analysis, Results, Summary

Chapter Four: Analysis, Results, Summary

The collected data from the research sample is statistically analyzed in this fourth chapter. There is an agreement that the data analysis phase constitutes the most significant phase throughout the entire research, which can be attributed to the contribution of the data analysis phase to reaching answers to the research questions and testing the research hypotheses. The findings reached in this chapter represent the basis for the conclusions and recommendations presented in the final chapter.

The data analyzed in this chapter is collected electronically through the Google Forms questionnaires and distributed electronically through a link to the respondents on social media platforms.

First, the numerical data was downloaded from "OneDrive" and then decoded and transferred into SPSS to perform all the statistical data analyses.

This chapter consists of the following sub-sections:

- Statistical treatment
- Reliability and validity of the questionnaire
- Demographics
- Descriptive statistics
- Inferential Analysis

4.2. Statistical Treatment

4.2.1. Statistical software

The researcher used IBM SPSS version 26.0 to run the statistical tests. There is an agreement that SPSS V26 is user-friendly statistical software.

4.2.2. Data

The primary data for the present research was collected from STC Bahrain employees, the third company in the telecommunication sector in Bahrain. It is the third in terms of occurrence as it entered the telecommunication sector in Bahrain starting in 2010. It is a Saudi telecommunication company. The first name of this company was VIVA Bahrain. Then it changed to STC Bahrain in 2018. A Google form was sent to the 474 employees of STC through a link sent to the HRM of the company, which in turn sent it to the employees as a WhatsApp message. All the retained responses were exported in Excel format. After proper data preparation and coding, the data is imported into IBM SPSS.

4.2.3. Codebook

The codebook was produced to document the variable information, including measure level, along with the numeric codes used and the associated category labels that they represent. The codebook is useful for interpreting the statistical results.

4.3. Reliability and validity of the questionnaire

4.3.1. Instrument validity:

Validity is known as “the procedure through which the researcher makes sure that the questionnaire measures what it is actually planned to measure” (Petty et al., 2009). For the present research, the questionnaire was reviewed and validated by a group of experts that have experience in the research field. These

included professors as well as the thesis committees. The suggestions and recommendations were incorporated into the revision of the instrument. The rationale for this validation is to avoid ambiguous items and biased statements, which have been truly achieved.

4.3.2. Research reliability:

It is accepted that internal reliability between questionnaire items is measured by the SPSS Alpha Cronbach alpha. In statistics, internal consistency refers to "a measure based on the correlations between different items on the same test" (Wieland et al., 2017). The major function of internal consistency is to measure if numerous statements that are assumed to measure the same general construct produce similar scores. It is known that the value of alpha goes up when the intercorrelations between the statements go up (Eisinga et al., 2013). The following table shows how values of alpha are interpreted.

Table 1 Reliability assessment results using Alpha Cronbach's method

Composite variable	Total number of items in the composite variable	Excluded items to improve reliability (if any)	Final Alpha Cronbach's coefficient of reliability (after excluding items)	Reliability level
Knowledge management in general	20	-	.948	Reliable
Knowledge acquisition	5	-	.789	Reliable
Knowledge sharing	5	-	.867	Reliable
Knowledge storage	5	-	.883	Reliable
Knowledge implementation	5	-	.874	Reliable
Dynamic Managerial capabilities	20	-	.917	Reliable
All the questionnaire items	40	-	.950	Reliable

Based on the outcomes of the table above, the internal consistency level between the items of each part and between all the items of the questionnaire is measured by the value of Alpha Cronbach. The accepted values for internal consistency start at 70%. This means that 0.70 is the lowest accepted value of Alpha (Cronbach, 1990). The internal consistency level for knowledge management as the independent variable in general, which is made up of 20 items, is 94.8% (0.948). The five items making up the part entitled “Knowledge acquisition” have an alpha Cronbach value of 78.9% (0.789). The Alpha value for the five items for the part entitled “Knowledge Sharing” is 86.7% (0.867). The internal consistency level between the five items for the part about “Knowledge storage” is high as it is 88.3% (0.883). The alpha level for the five items representing “knowledge implementation” is highly reliable as it is 87.4% (0.874).

The twenty items representing “Dynamic Managerial capabilities” is 91.7% (0.917), which is a high level of internal consistency.

The alpha value for all the 40 items of the questionnaire is high as it is 95% (0.950).

There is agreement that when internal reliability between the variables is high (0.95) and 95%, there is a high probability that the variables are correlated to each other (Winer et al., 1991). This means that internal reliability between knowledge management and dynamic managerial reliability is an indicator that there will be a significant impact of knowledge management on dynamic managerial reliability.

4.4. Normality Assumption Testing

Normality assumption testing is an important statistical consideration. The normality assumption is made for the parametric inferential tests. In other

words, knowing if this assumption was verified or not will guide the inferential analysis with regard to which method to be used.

Normality assumptions were tested using the univariate Kolmogorov-Smirnov test. The null hypothesis for this test is that the variable data follows a normal distribution. The results of the normality assumption test are shown in Table 4-17 below. The Kolmogorov-Smirnov normality test was found significant for all variables at a 1% significance level. Therefore, all composite variables were found to be not normally distributed. Accordingly, in this research, non-parametric inferential methods would be employed as these non-parametric methods do not assume normality assumption.

Table 2 Normality assumption check using Kolmogorov-Smirnov test

	Kolmogorov-Smirnov Normality test ^a		
	Statistic	df	p-value
Knowledge acquisition	.959	192	.014**
Knowledge sharing	.955	192	.000**
Knowledge storage	.957	192	.000**
Knowledge implementation	.962	192	.000**
Dynamic Managerial capabilities	.982	192	.007**
a. Lilliefors Significance Correction			

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

Normality tests represent an effective procedure to prepare data for inferential analysis. The normality assumption is proposed for the parametric inferential tests. This is attributed to the fact that the researcher will have an indicator of the best method to use, whether it is verified or not.

A normality assumption is made via the univariate Kolmogorov-Smirnov test. The null hypothesis for this test is that the variable data follows a normal distribution. The results of the normality assumption test are represented in Table 2 above. The Kolmogorov-Smirnov normality test is a significant test for all variables at a 1% significance level. Consequently, all composite variables are recognized not to be normally distributed. Thus, in this research, non-parametric inferential methods would be employed as these non-parametric methods do not assume normality assumption.

4.5. Demographic data analysis:

Frequency and percentage analyses are performed in this section. The demographic variables analyzed include gender, age, type of bank, position, years of experience, and education. Demographics refer to "the characteristics of a population that have been categorized by distinct criteria—such as age, gender, and income—as a means to study the attributes of a particular group" (Connelly, 2013).

Analyzing the data of the respondent constitutes essentiality within social science research. This is understood in light of the significance of the demographic variables themselves.

Some researchers assume that demographics are significant since they provide a broad vision concerning the numerous features of the research population. Such data is especially beneficial for government organizations when making critical policy decisions regarding the research population. Firms and other businesses that perform within the borders of the private sector are more likely to employ demographics to gain better recognition from the public and, consequently, better business strategies and marketing plans.

It is alleged that understanding demographics and their statistical possibilities is significant for all business stakeholders, not only for governments, firms, and specialists in the research domain. Such decisions established on the research demographics data are predicted to have a powerful effect on the organization's daily practices (Lazar & Hochheise, 2017).

4.5.1. Response rate:

Though 212 respondents were targeted, the researcher was surprised that those 198 responses were received. This means that the rate of response was 93.3%. Six questionnaire forms were incomplete, and the researcher excluded them. Therefore, the number of questionnaires to be analyzed was 192.

4.5.2. Gender statistics

Table 3 Gender statistics

		Frequency	Percent	Valid Percent
Valid	Male	68	35.4	35.4%
	Female	124	64.6	64.6%
	Total	192	100.0	100.0

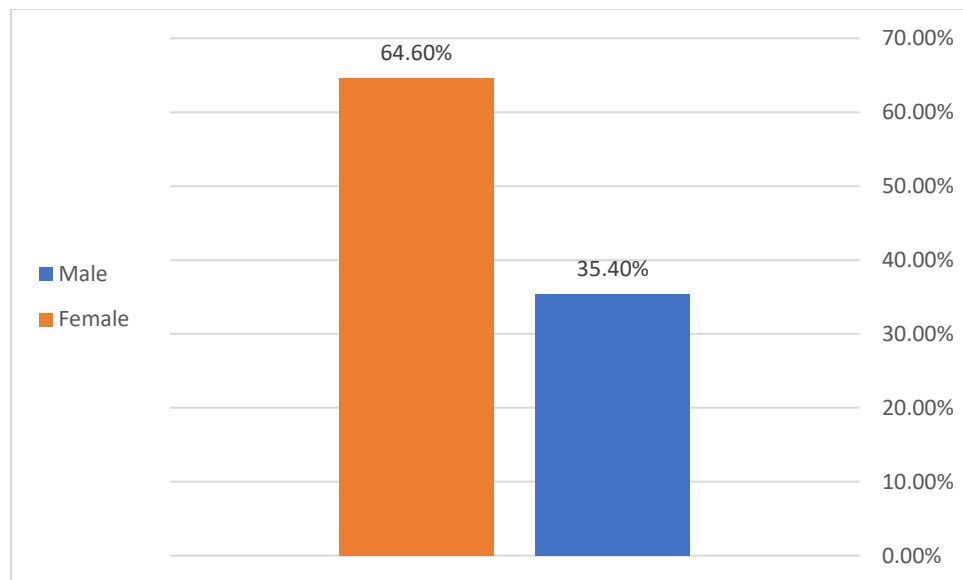


Figure 4 Gender statistics

In this part, the respondents were required to point out their gender. These questionnaire items aimed to illustrate the extent to which the STC Bahrain succeeded in eliminating the possibility of gender imbalance.

Based on the values coming out in table 3 above, it is evident that the percentage of female respondents is 64.6%. The percentage of male respondents represents 35.4%. This is evidence that the STC Bahrain creates a balance between the male and female workforce. STC is following the principles of the Bahraini Reform Program Sponsored by HH. King Hamad started in 2002, aimed at empowering the Bahraini woman.

4.5.3. Age Statistics:

Table 4 Age Statistics

		Frequency	Percent	Valid Percent
Valid	25 or below	37	19.3	19.3%
	26 to 39	110	57.3	57.3%
	40 to 59 years	45	23.4	23.4%

	Total	192	100.0	100.0%
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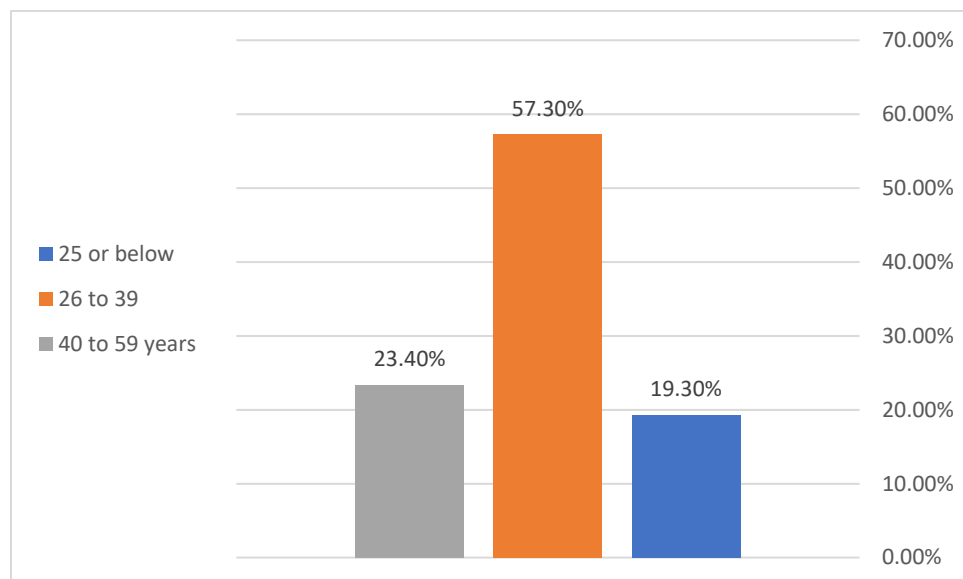


Figure 5 Age Statistics

In this section, the researcher seeks to find out the respondents' age areas to recognize whether or not STC Bahrain is a youthful sector. Based on the values in the table above (4), it is evident that the respondents aged from 26 to 39 years represent 57.3%. Those who are 40 to 59 years represent 23.4%. Those who age 25 or below represent 19.3%. This proves that STC Bahrain is a youthful company in which the majority of the respondents, 76.6%, are below 40 years.

4.5.4. Job Statistics:

Table 5 Job Statistics

		Frequency	Percent	Valid Percent
Valid	Front desk Employee	112	58.3	58.3%
	HR employee	51	26.6	26.6%
	Manager	29	15.1	15.1%
	Total	192	100.0	100.0

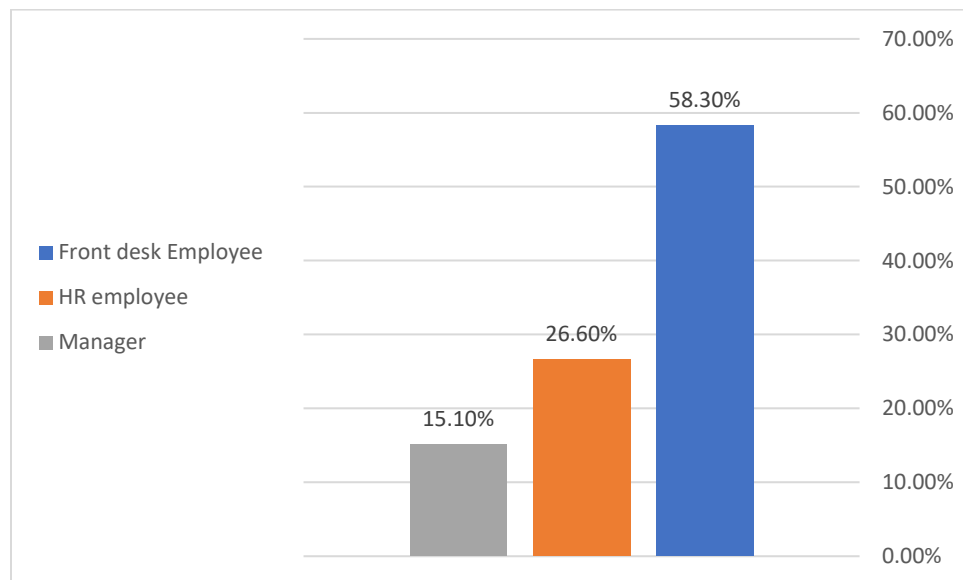


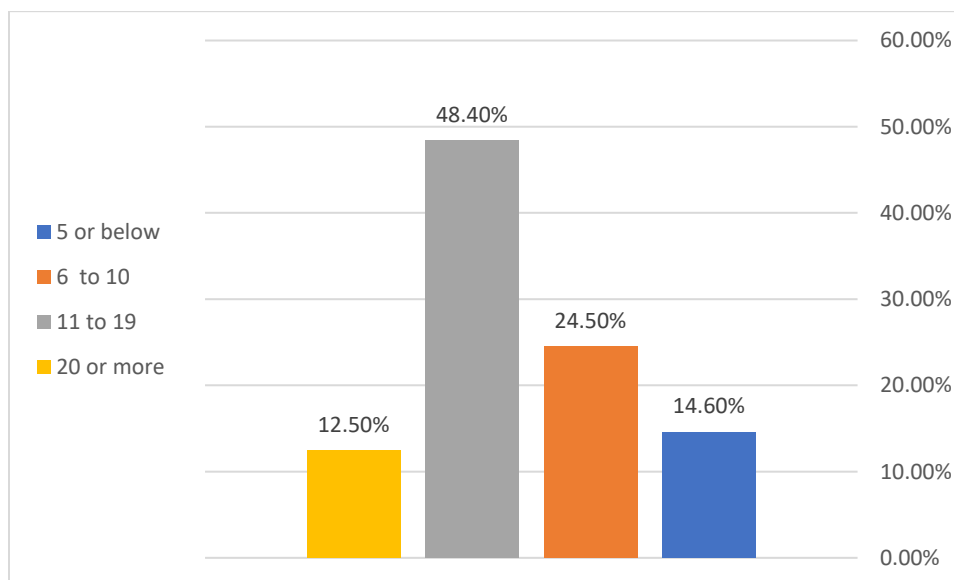
Figure 6 Job Statistics

Analysis of this section is intended to categorize the respondents according to their jobs in STC. Based on the job data above, it is observed that 58.3% are front desk employees; 26.6% are HR employees; 5.1% are managers. This proves that junior positions are more than senior ones. This is consistent with the results about respondents' age in table (4).

4.5.5. Years of experience statistics:

Table 6 Years of experience statistics

		Frequency	Percent	Valid Percent
Valid	5 or below	28	14.6	14.6%
	6 to 10	47	24.5	24.5%
	11 to 19	93	48.4	48.4%
	20 or more	24	12.5	12.5%
	Total	192	100.0	100.0

**Figure 7 Years of experience statistics**

4.5.6. Education Statistics

Table 7 Education Statistics

		Frequency	Percent	Valid Percent
Valid	Secondary degree	3	1.6	1.6%
	University degree	16	9.9	9.9%
	Diploma degree	105	54.7	54.7%
	Post- graduation degree	65	33.9	33.9%
	Total	192	100.0	100.0

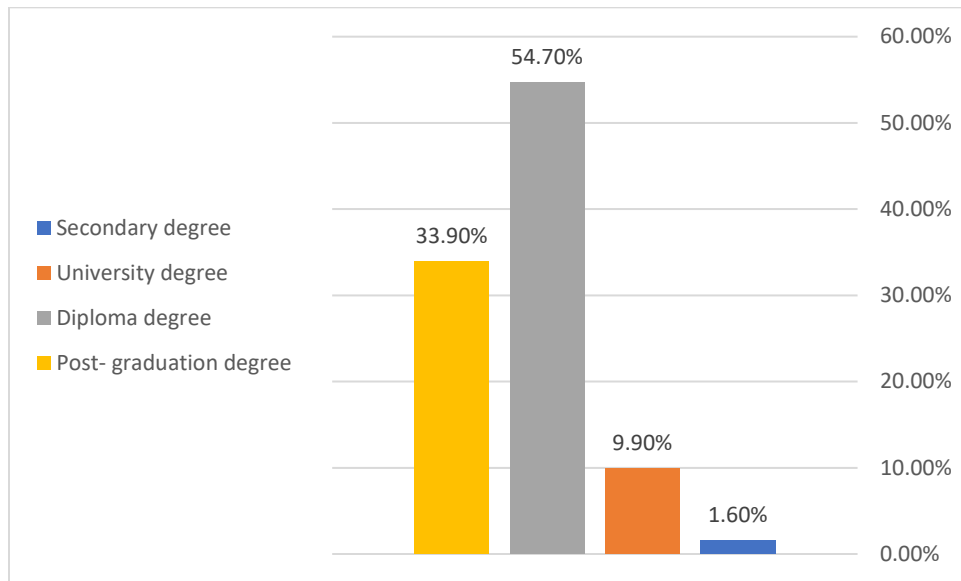


Figure 8 Education Statistics

In this section, the data about the respondent's education is analyzed to find out whether or not the sector in which the study is applied is a learning sector.

From the data analyzed in table (7) above, it is inferred that 54.7% holds high diploma degree. Those who hold post-graduate degrees represent 33.9%. Those who hold university degrees represent 9.9%. The Secondary school certificate holders represent 1.6%. In light of the data analysis, STC Bahrain is a learning organization since holders of university degrees and post graduate degrees represent 98.4%.

4.5.7. Nationality Statistics:

Table 8 Nationality Statistics

		Frequency	Percent	Valid Percent
Valid	Bahraini	161	83.9	83.9%
	Non-Bahraini	31	16.1	16.1%
	Total	192	100.0	100.0%

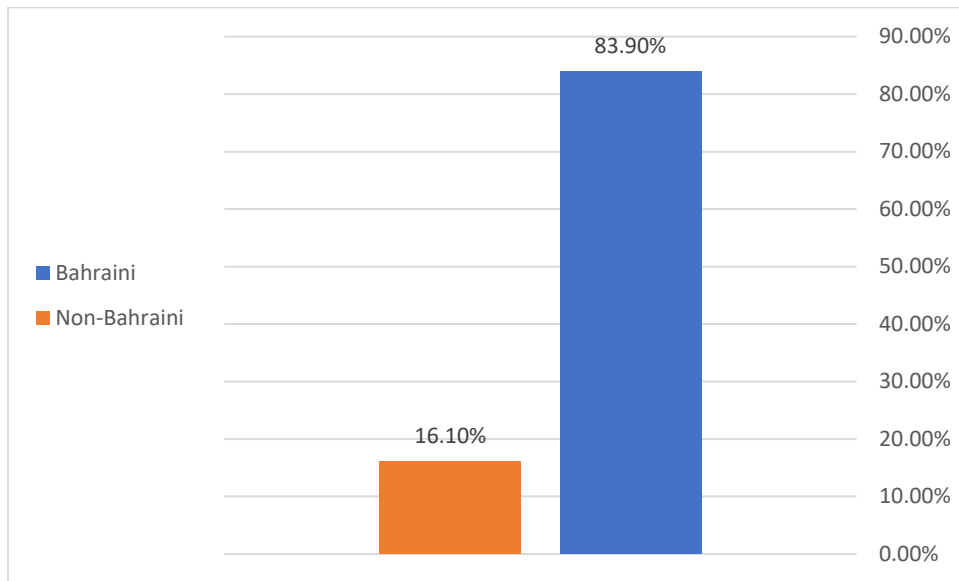


Figure 9 Nationality Statistics

In this section, the data about the respondents' nationality is analyzed to find out whether or not STC applies to Bahrainisation. From nationality analysis in table 9, it is evident that the Bahraini employees in STC represent 83.9%, while 16.1% of the respondents are Non-Bahraini employees. The percentage of the Bahraini employees ensure that STC apply Bahrainisation which is a strategy that encourages hiring Bahraini people more than foreigners.

4.6. Descriptive Statistics:

Descriptive statistics is one of the most important tests that are performed when analyzing data of two or more variables. One of the most commonly used definitions for descriptive statistics is the one presented by Satake (2015), who referred to it as "Brief descriptive coefficients that summarize a given data set, which

can be either a representation of the entire population or a sample of it". Descriptive statistics enable researchers to provide descriptions and make the best understanding of the characteristics of a particular data set.

In this section, the researcher depends on the values mentioned in table 4 that focus on "Likert scale ranges and interpretations".

There are two variables: the independent variable (knowledge Management processs). This variable is categorized into four sub-variables (knowledge acquisition, knowledge sharing- knowledge storage- knowledge implementation). This variable includes 20 items. The dependent variable is (dynamic managerial capabilities). This variable includes 20 items.

When descriptive statistics are used, the researcher uses the mean scores and standard deviations.

The outcomes of descriptive statistics especially mean scores, are interpreted in light of the following table that provides a criterion for understanding what mean scores are:

Table 9 Likert Scale Ranges and Interpretations

Scale	Range	Interpretation	Description
1	1:00 – 1:79	Strongly Disagree	The respondent strongly disagrees with the statement
2	1:80 – 2:59	Disagree	The respondent disagrees with the statement
3	2: 60 – 3: 39	Neutral	The respondent are neutral towards the statement
4	3: 4 – 4:19	Agree	The respondent agrees with the statement
5	4: 20 – 5: 00	Strongly Agree	The respondent strongly agrees with the statement

4.6.1. Descriptive Statistics for the independent variable (Knowledge management)

The independent variable (Knowledge management) is made up 20 items. Four components (sub-variables) represent the mechanisms of Knowledge management.

Table 10 Knowledge acquisition

	N	Mean	STD	Interpretation
1-In my organization, there are various opportunities to acquire the needed knowledge.	192	3.67	.910	Agree
2-Knowledge is provided in my organization via training on the job and out the job.	192	3.52	.981	Agree
3-My organization always seeks to support the employees' knowledge by providing them with the latest articles about their jobs' requirements.	192	3.67	.988	Agree
4-Employees are encouraged to study and gain more degrees by the management of my organization.	192	3.56	.890	Agree
5-My organization has short-term and long -term plans to enhance employee's knowledge.	192	3.73	.904	Agree
Valid N (listwise)	192	3.63	0.934	Agree

It is evident from the outcomes of table 10 above that the process of knowledge acquisition in STC is effective. This is attributed to the average mean score for the five items that make up this section. The average mean score is 3.63 out of 5.00, which is a high mean score.

The item with the highest mean score of 3.73 is the 5th. The agreement on the content of this item says, "My organization has short-term and long-term plans to enhance employee's knowledge". The item with the lowest mean score of

3.52 is the 2nd. There is an agreement of the content saying, “Knowledge is provided in my organization via training on the job and out the job”.

Table 11 Knowledge sharing

	N	Mean	STD	Interpretation
6- There is a computerized system through which knowledge can be shared.	192	3.52	1.048	Agree
7- Distinct employees in sharing their knowledge are valued.	192	3.53	.970	Agree
8- Employees are encouraged to share what they know about work requirements.	192	3.58	.989	Agree
9- Employees who receive out-job training are required to hold meetings to share what they have acquired. Knowledge sharing is part and parcel of the company's culture.	192	3.51	1.063	Agree
10- The ability to share knowledge is a component of the employees' performance appraisal.	192	3.61	1.007	Agree
Valid N (listwise)	192	3.55	1.01	Agree

It is evident from the outcomes of table 11 above that the process of knowledge sharing in STC is effective. This is attributed to the average mean score for the five items that make up this section. The average mean score is 3.55 out of 5.00 which is a high mean score.

The item with the highest mean score 3.73 is the 10th. There is an agreement on the content of this item, saying, “The ability to share knowledge is a component of the employees' performance appraisal”. The item with the lowest mean score 3.51 is the 9th. The content agrees that “Employees who receive out-job

training are required to hold meetings to share what they have acquired. Knowledge sharing is part and parcel of the company's culture".

Table 12 Knowledge storage

	N	Mean	STD	Interpretation
11- There are traditional and digital processes to create and store knowledge in my organization.	192	3.44	1.110	Agree
12- There is an I-cloud storage capacity for whatever knowledge employees create and possess.	192	3.48	1.023	Agree
13- knowledge that is stored online is accessible by all the employees in my organization.	192	3.60	1.024	Agree
14- There are protective procedures for the knowledge stored online against any cyber-attacks.	192	3.77	.905	Agree
15- Employees' knowledge can be recalled at any time to be shared from the online sites.	192	3.68	.897	Agree
Valid N (listwise)	192	3.59	0.991	Agree

It is evident from the outcomes of table 12 above that the process of knowledge storage in STC is effective. This is attributed to the average mean score for the five items that make up this section. The average mean score is 3.59 out of 5.00, which is a high mean score.

The item with the highest mean score of 3.77 is the 14th. There is an agreement on the content of this item, saying, "There are protective procedures for the knowledge stored online against any cyber-attacks". The item with the lowest mean score of 3.44 is the 11th. There is an agreement of the content saying, "There

are traditional and digital processes to create and store knowledge in my organization”.

Table 13 Knowledge implementation

	N	Mean	STD	Interpretation
16- Employees’ knowledge is implemented for making change happen in my organization.	192	3.56	1.001	Agree
17- There are plans and instruments that grant systematical and adequate implementation of the employees’ knowledge.	192	3.54	1.018	Agree
18- Not only employees but also the leadership are involved in the knowledge implementation process.	192	3.57	.913	Agree
19- There is continuous feedback from my organization management regarding the knowledge implementation context.	192	3.67	1.035	Agree
20- Everyone in my organization is involved in building a knowledge implementation map.	192	3.55	.948	Agree
Valid N (listwise)	192	3.57	0.983	Agree

It is evident from the outcomes of table 13 above that the process of knowledge implementation in STC is effective. This is attributed to the average mean score for the five items that make up this section. The average mean score is (3.57) out of (5.00) which is a high mean score.

The item with the highest mean score of 3.67 is the 19th. The is an agreement on the content of this item, saying, “There is continuous feedback from my organization management regarding the knowledge implementation context”. The item with the lowest mean score, 3.55, is the 20th. There is an agreement of the

content saying, “Everyone in my organization is involved in building a knowledge implementation map”.

Table 14 Summary statistics of the composite independent variables

composite variables	Summary statistics	
	Mean	SD
Knowledge acquisition	3.63	0.934
Knowledge sharing	3.55	1.01
Knowledge storage	3.59	0.991
Knowledge implementation	3.57	0.983
Average mean score for knowledge Management	3.58	0.979

Based on the Summary statistics of the composite independent variables, it is evident that STC Bahrain adopts all the knowledge Management processs effectively. This is attributed to the average mean score for all the 20 items making up this section, 3.58. *Knowledge acquisition* is the most effective mechanism in STC, as the average mean score is 3.63. This is followed by Knowledge storage, whose mean score is 3.59. Then comes Knowledge implementation, whose mean score is 3.57. The lowest effective mechanism is Knowledge sharing since its average mean score is 3.55.

4.6.2. Descriptive Statistics for the dependent variable (dynamic managerial capabilities)

Table 15 Descriptive Statistics for the dependent variable (dynamic managerial capabilities)

	N	Mean	STD	Interpretation
1- My organization attracts and retains highly qualified and competent managers.	192	3.72	.972	Agree
2-Managers in my organization achieve better total control of the organization's general performance.	192	3.78	.973	Agree
3-The organization managers perceive new opportunities and potential threats.	192	3.81	.872	Agree
4-My managers develop and communicate the organization's purpose in a clear way to which all members can relate.	192	3.89	.855	Agree
5-My managers resolve conflicting opinions.	192	3.83	.934	Agree
6-Managers in my organization improve coordination and effective collaboration between key executives.	192	3.92	.868	Agree
7-Managers generate enthusiasm and motivate the high management unit sufficiently to achieve improved performance.	192	3.85	.812	Agree
8-My organization managers develop a system of strategic plans throughout the organization that is effective for the organization's general development.	192	3.83	.947	Agree
9-My managers develop training programs for the organization's members.	192	3.90	.862	Agree
10-The use of management by objectives has increased in the organization.	192	3.86	.952	Agree
11-The use of financial accountability reporting has increased.	192	3.82	.949	Agree
12-The participation of top and intermediate managers in the decision-making process has increased.	192	3.95	.917	Agree
13-The extensive, effective use of quantitative techniques in decision making has increased.	192	3.83	.934	Agree
14-The extensive, effective use of quantitative techniques in decision making has increased.	192	3.91	.944	Agree
15-The organization managers can address different types of challenges.	192	3.80	1.019	Agree
16-My managers are able to deal with crises effectively.	192	3.89	.912	Agree
17-My managers demonstrate tacit and explicit knowledge.	192	3.95	.823	Agree
18-Managers in my organization are charismatic.	192	4.00	.838	Agree

19-Managers in my organization are able establish effective relationships with the employees.	192	3.89	.925	Agree
20-My organization managers are emotionally intelligent.	192	3.68	1.088	Agree
Valid N (listwise)	192	3.85	0.919	Agree

It is evident from the outcomes of table 15 above that dynamic managerial capabilities in STC are effective and given due attention by the company. This is attributed to the average mean score for the twenty items that make up this section. The average mean score is 3.85 out of 5.00, which is a high mean score.

The item with the highest mean score of 4.00 is the 18th. The is an agreement on the content of this item saying, “Managers in my organization are charismatic”. The item with the lowest mean score of 3.68 is the 20th. The content agrees with the statement, “My organization managers are emotionally intelligent”.

4.7. Inferential statistics

The researcher employs all the necessary statistical tests to infer the relationship between the research variables in this section, which enables the researcher to test the research hypotheses.

4.7.1 Testing the first hypothesis and the four sub-hypotheses:

In order to test the first hypothesis and the four sub-hypotheses derived from this main hypothesis, the researcher runs three statistical tests: Pearson correlation, simple regression, and multiple regression.

Table 16 Pearson's Correlation between knowledge Management processs (K acquisition, K sharing, K storage & K implementation) and dynamic managerial capabilities

		KACQ	KSH	KS	KMI	DMC
KACQ	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	192				
KMSH	Pearson Correlation	.761**	1			
	Sig. (2-tailed)	.000				
	N	192	192			
KMS	Pearson Correlation	.678**	.724**	1		
	Sig. (2-tailed)	.000	.000			
	N	192	192	192		
KMI	Pearson Correlation	.667**	.754**	.729**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	192	192	192	192	
DMC	Pearson Correlation	.466**	.504**	.362**	.525**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	192	192	192	192	192
**. Correlation is significant at the 0.01 level (2-tailed).						

In table 16 above:

KACQ: refers to Knowledge acquisition

KSH: Knowledge sharing

KS: Knowledge storage

KI: Knowledge implementation

DMC: Dynamic Managerial Capabilities

Based on the outcomes of the Pearson correlation, it was found that there is a significant correlation between all the independent variables (Knowledge acquisition, Knowledge sharing, Knowledge storage & Knowledge implementation)

and dynamic managerial capabilities in STC Bahrain at 1%. This is attributed to the sig value, which is 0.000. The strongest correlation is between Knowledge Implementation and dynamic managerial capabilities (.525**). It is a strong and positive correlation. The second strongest correlation is between Knowledge Sharing and dynamic managerial capabilities (.504**). The correlation between knowledge and dynamic managerial capabilities is also strong (.466**). The lowest level of correlation (.362**) is between Knowledge Sharing and dynamic managerial capabilities. All the correlations are significant at 1% and are all strong and positive.

In order to calculate the value of knowledge management's impact on dynamic managerial capabilities in STC Bahrain, the researcher performs simple and multiple regression tests.

“There is a significant impact of knowledge management on dynamic managerial capabilities in STC Bahrain”.

Table 17 Regression Model Summary

Model	R	R Square	Adjusted R Square	T	Sig
1	.522 ^a	.272	.268	8.430	0.000
a. Predictors: (Constant), dynamic managerial capabilities					

Based on the outcomes of the regression model in table 17 above, it is evident that the value of R square is 0.272. This value assumes that knowledge management is responsible for about 27.2% of this change whenever there is a change in dynamic managerial capabilities. Similarly, each unit change in knowledge management is met with 0.522 units of change in dynamic managerial capabilities since the R-value is 0.522. The T-value is 8.430 is an indicator that the impact of knowledge management on dynamic managerial capabilities in STC Bahrain is positive. The value of sig is 0.000. This value is below the standardized values of 0.05 and 0.01.

This is evidence that the independent variable (knowledge management) significantly impacts the dependent variable (dynamic managerial capabilities in STC Bahrain). Thus, the first alternative hypothesis is accepted, and the null is rejected. This means that

“There is a significant impact of knowledge management on dynamic managerial capabilities in STC Bahrain”.

Multiple regression is run to test the four sub-hypotheses derived from the first main hypothesis:

Table 18 Multiple regression Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.285	.192		11.918	.000
	Knowledge acquisition	.144	.081	.172	1.771	.078
	Knowledge sharing	.161	.078	.229	2.066	.040
	Knowledge storage	-.140-	.068	-.199-	-2.042-	.043
	Knowledge implementation	.274	.072	.382	3.791	.000

a. Dependent Variable: dynamic managerial capabilities

Based on the multiple regression Coefficients in table 18 above, the four sub-hypotheses are tested as follows:

The first sub-hypotheses saying, "There is a significant impact of knowledge acquisition on dynamic managerial capabilities in STC Bahrain", is rejected since the sig value is (0.078), which is above (0.05).

The second sub-hypothesis, "there is a significant impact of knowledge storage on dynamic managerial capabilities in STC Bahrain, "is accepted as the sig value (0.040). This means that knowledge storage significantly impacts dynamic managerial capabilities in STC Bahrain at 5%.

The third sub-hypothesis, "there is a significant impact of knowledge sharing on dynamic managerial capabilities in STC Bahrain". This is because the sig value is (0.043), below (0.05). This means that knowledge sharing significantly impacts dynamic managerial capabilities in STC Bahrain at 5%.

The fourth sub-hypothesis saying, "there is a significant impact of knowledge implementation on dynamic managerial capabilities in STC Bahrain", is accepted as the sig value is (0.00), which is below (0.01). This means that knowledge implementation significantly impacts dynamic managerial capabilities in STC Bahrain at 1%.

4.7.2. Testing the second hypothesis:

In order to test the second hypothesis saying, "There is a significant difference concerning the recognition of the impact knowledge management on dynamic managerial capabilities in STC Bahrain attributed to the demographic variable (Gender-age- job-years of experience- education level- nationality)", the researcher employs, the researcher makes use of the bivariate inferential tests that represents an inferential analysis between the two variables (knowledge management and dynamic managerial capabilities). The bivariate inferential tests here are run to assess whether or not any statistically significant impacts exist due to the studied variables' demographic variables. Such bivariate results are established on the non-parametric tests Mann-Whitney or Kruskal-Wallis. On the one hand, Mann-Whitney is employed because the demographic variables have only two categories. On the other hand, Kruskal-Wallis is employed if the demographic variables have three or more categories. However, both tests (Mann-Whitney and

Kruskal-Wallis) are run while considering that the null hypothesis "there is no statistically significant impact" is considered. It is important to indicate that for all inferential analyses performed hereafter, the statistical significance considered are:

- Significant at 5% when the p-value computed from the inferential test is below (0.05). When this happens, the null hypothesis is rejected, and the alternative is accepted. This Significance level is referred to by one star (*).
- Significant at 1% when the p-value computed from the inferential test is below (0.01). When this happens, the null hypothesis is rejected, and the alternative is accepted. This Significance level is referred to by two stars (**).
- Not significant at (1%) nor (5%) when the p-value computed from the inferential test is above (0.05) and (0.01). When this happens, the null hypothesis is accepted, and the alternative is rejected. Any stars do not refer to this Significance level.

The demographic variables effects assessed included the following:

- Gender
- Age
- Job
- Years of experience
- Education level
- Nationality

4.7.2.1. Gender impact

Table 19 Mann-Whitney test for gender effect

Composite variables	Mann-Whitney test ^a			
	Mann-Whitney U	Wilcoxon W	Z	p-value
Knowledge acquisition	4188.000	21137.500	.478	.976
Knowledge sharing	3979.000	20293.500	.635	.815
Knowledge storage	4201.000	20467.500	.484	.973
Knowledge implementation	3866.500	18571.000	.569	.902
Dynamic managerial capabilities	4119.500	18862.000	.500	.964
a. Grouping Variable: Gender				

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to table 19 above, it is evident that the values of the Mann-Whitney test indicate that all the examined independent and dependent variables are found that the demographic variable gender has no statistically significant impact on the attitude of the respondents towards the independent variable and the dependent variable and the relationship between them. This is because all the P-values are above (0.01) and (0.05). So, there is no significant difference at 5% or 1%.

Table 20 Summary statistics of gender for statistically significant variable only

	Female		Male	
	Mean	STD	Mean	STD
Knowledge acquisition	4.27	.75744	4.36	.65039
Knowledge sharing	4.41	.90727	4.55	.76805
Knowledge storage	4.39	.89432	4.56	.78058
Knowledge implementation	4.47	.83047	4.58	.80255
Dynamic managerial capabilities	3.8735	.57345	3.8460	.57825

According to the statistics on gender, it is evident that males had a higher level of the statistically significant variable when compared to females.

4.7.2.2. Age impact:

Table 21 - Kruskal Wallis test for age effect

Composite variables	Kruskal Wallis test ^a		
	Kruskal-Wallis H	df	p-value
Knowledge acquisition	2.324	2	.313
Knowledge sharing	.277	2	.366
Knowledge storage	2.287	2	.319
Knowledge implementation	2.568	2	.277
Dynamic managerial capabilities	4.537	2	.103
a. Grouping Variable: Age Group			

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to the Kruskal Wallis test in table 21 above, it is evident that there is no statistically significant difference in the respondent's attitude towards the independent research variables and dependent variables attributed to the demographic variable of age due to the p-values which are all above 5% or 1%.

Table 22 Summary statistics of Age for statistically significant variable only

Composite variables	Age Group					
	25 or below		26 to 39		40 to 59 years	
	Mean	STD	Mean	STD	Mean	STD
Knowledge acquisition	3.7135	.63690	3.5745	.66972	3.6978	.77298
Knowledge sharing	3.7297	.62221	3.4836	.84956	3.5600	.88482
Knowledge storage	3.7135	.77394	3.6182	.80846	3.4356	.88244

Knowledge implementation	3.7784	.59026	3.5345	.85461	3.5156	.81183
Dynamic managerial capabilities	3.7703	.65005	3.8259	.54427	3.9989	.57213

Table 22 shows that the age group below 25 has the highest level of the statistically significant variable when compared to other age groups (older ages).

4.7.2.3 Job Impact

Table 23 Kruskal Wallis test for job effect

Composite variables	Kruskal Wallis test ^a		
	Kruskal-Wallis H	df	p-value
Knowledge acquisition	1.388	2	.499
Knowledge sharing	.277	2	.870
Knowledge storage	1.307	2	.520
Knowledge implementation	4.323	2	.115
Dynamic managerial capabilities	3.584	2	.167
a. Grouping Variable: Age Group			

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to the Kruskal Wallis test in table 22 above, it is evident that there is no statistically significant difference in the respondent's attitude towards the independent research variables and dependent variables attributed to the demographic variable of job due to the p-values which are all above 5% or 1%.

Table 24 Summary statistics of age for statistically significant variable only

Composite variables	Job Type					
	Front desk Employee		HR employee		Manager	
	Mean	STD	Mean	STD	Mean	STD
Knowledge acquisition	3.7034	.85293	3.6784	.68944	3.5893	.64366
Knowledge sharing	3.5724	.97939	3.6000	.77666	3.5196	.80246
Knowledge storage	3.6207	1.03557	3.6824	.79717	3.5464	.77296

Knowledge implementation	3.7724	.81368	3.6706	.83888	3.4839	.77559
Dynamic managerial capabilities	3.9552	.67273	3.9627	.56079	3.7812	.54777

According to table 24, it is evident that job types have the job of HR employee has the highest level of the statistically significant variable when compared to other job types.

4.7.2.4 Years of experience Impact

Table 25 Kruskal-Wallis test for years of experience impact

Composite variables	Kruskal Wallis test ^a		
	Kruskal-Wallis H	df	p-value
Knowledge acquisition	4.151	3	.246
Knowledge sharing	1.233	3	.745
Knowledge storage	1.589	3	.662
Knowledge implementation	1.865	3	.601
Dynamic managerial capabilities	4.860	3	.182
a. Grouping Variable: years of Experience			

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to the Kruskal Wallis test in table 25 above, it is evident that there is no statistically significant difference in the respondent's attitude towards the independent research variables and dependent variables attributed to the demographic variable of years of experience due to the p-values, which are all above 5% or 1%.

Table 26 Summary statistics of years of experience for statistically significant variable only

Composite variables	Job Experience							
	5 or below		6 to 10		11 to 19		20 or more	
	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Knowledge acquisition	3.6857	.58482	3.7106	.79214	3.5376	.64064	3.7667	.75450
Knowledge sharing	3.6357	.76798	3.6255	.79850	3.4946	.84934	3.5083	.84231
Knowledge storage	3.6071	.77456	3.6979	.80420	3.5763	.87170	3.4417	.71743
Knowledge implementation	3.7714	.61515	3.6213	.77822	3.5183	.89308	3.4917	.65668
Dynamic managerial capabilities	3.6893	.60803	3.9319	.59045	3.8194	.54653	4.0417	.57835

Table 26 above shows that the experience range 5 years or below has the highest level of the statistically significant variable when compared to other years of experience.

4.7.2.5 Education level Impact

Table 27 Kruskal-Wallis test for education level impact

Composite variables	Kruskal Wallis test ^a		
	Kruskal-Wallis H	df	p-value
Knowledge acquisition	4.472	3	.215
Knowledge sharing	3.220	3	.359
Knowledge storage	2.873	3	.412
Knowledge implementation	3.835	3	.002**
Dynamic managerial capabilities	9.842	3	.280

a. Grouping Variable: Qualification

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to the Kruskal Wallis test in table 28 above, it is evident that there is no statistically significant difference in the respondent's attitude towards the independent research variables and dependent variables attributed to the demographic variable of years of experience due to the p-values, which are all above 5% or 1%.

Table 28 Summary statistics of education level for statistically significant variable only

Composite variables	Qualification							
	Secondary degree		University degree		Diploma degree		Post- graduation degree	
	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Knowledge acquisition	3.4667	1.60416	4.1333	.43205	3.5810	.70139	3.6215	.65681
Knowledge sharing	3.8667	1.02632	3.8333	.63770	3.4552	.84557	3.6092	.81042
Knowledge storage	3.0667	1.81475	4.0000	.77974	3.5219	.85866	3.6738	.73192
Knowledge implementation	4.0667	.90185	3.8667	.80664	3.4800	.84471	3.6338	.76613
Dynamic managerial capabilities	4.3333	1.15470	4.5833	.52409	3.7933	.57429	3.8369	.52621

According to table 28 above, generally, university degree holders have the highest level of the statistically significant variable when compared to other types of education.

4.7.2.6 Nationality Impact

Table 29 Mann-Whitney test for nationality effect

Composite variables	Mann-Whitney test ^a			
	Mann-Whitney U	Wilcoxon W	Z	p-value
Knowledge acquisition	2392.000	15433.000	-.368-	.713
Knowledge sharing	2458.500	2954.500	-.131-	.896
Knowledge storage	2317.500	2813.500	-.632-	.527
Knowledge implementation	2447.000	15525.500	-.171-	.969
Dynamic managerial capabilities	2484.500	2943.000	-.039-	.864
a. Grouping Variable: nationality				

* significant at 5% significance level (p-value < 0.05); ** significant at 1% significance level (p-value < 0.01)

According to table 29 above, it is evident that the values of the Mann-Whitney test indicate that all the examined independent and dependent variables are found that the demographic variable nationality has no statistically significant impact on the attitude of the respondents towards the independent variable and the dependent variable and the relationship between them. This is because all the P-values are above (0.01) and (0.05). So, there is no significant difference at 5% or 1%.

Table 30 Summary statistics of gender for statistically significant variable only

	Female		Male	
	Mean	STD	Mean	STD
Knowledge acquisition	3.6186	.71687	3.6903	.52368
Knowledge sharing	3.5404	.84612	3.5935	.68602
Knowledge storage	3.6000	.82885	3.5613	.79233
Knowledge implementation	3.5677	.81912	3.6258	.72063
Dynamic managerial capabilities	3.8534	.56328	3.8677	.64350

According to table 30 above, male respondents have the highest level of the statistically significant variable compared to female respondents.

4.7. Summary

In the fourth chapter, the researcher presented the readers with detailed analyses of the data that was collected from 192 individuals who are employees in STC Bahrain. The findings reached in this chapter help answer the research questions and test its hypotheses.

Chapter 5

Discussions & Recommendation

Chapter 5: Discussions & Recommendation

5.1. Introduction

The last chapter of the present thesis is dedicated to presenting the conclusions reached from the data analysis process conducted in the fourth chapter. Throughout this chapter, the researcher introduces the conclusions from the findings introduced in chapter three. These conclusions are discussed in light of the findings of the previous research. This provides the researcher and the readers with an insight into the extent to which the present conclusions are consistent with or different from previous research conclusions. Some recommendations are presented for those concerned with the current research topic. This chapter also focuses on the implications and limitations of the present research.

5.2. Discussion of the Research conclusions

STC Bahrain pays due attention to the knowledge Management processs. STC Bahrain is a learning organization, evident from the percentages of the high diploma holders and postgraduate studies holders, who represent 88.6%. Being a learning organization is one of the most important pillars on which a company establishes its ability to manage the knowledge of the employees (Abbas & Sağsan, 2019). All the mechanisms of knowledge are effectively in STC. The company recognizes the significance of knowledge management that supports its capacity to improve and survive in the highly competitive business environment. Kim and Yun (2015) support this notion that when organizations pay attention to

knowledge, management is a key component of organizational excellence. Knowledge management's significance for organizations is also ensured by the findings of Abbas & Sa'gsan (2019), Abuaddous et al. (2018) and Chen (2017) that there is a positive relationship between knowledge management and competitive advantage.

Knowledge acquisition is one of the mechanisms that are supported in STC. There are short-term and long-term schemes through which employees are provided with knowledge. This is consistent with Huynh et al. (2022). Training and development are means through which knowledge is provided. Through different types of training, employees can obtain the required knowledge. This is in line with the findings of Nwaiwu and Imafidon (2017), which ensure the possibility of supporting the employees' knowledge by providing them with the latest writings about their jobs' requirements.

Knowledge sharing effectively takes place in STC. The company exerts efforts to motivate employees to share their knowledge. This is recognized by making knowledge sharing a component of the employee's performance appraisal. When employees' ability to share knowledge increases, their appraisal degree increases. STC recognizes that knowledge sharing is a powerful mechanism that positively impacts competitive advantage(Chung & Yoon, 2020). In addition, the employees are encouraged to share what they know about their work requirements. This is why STC ensures that distinct employees in sharing their knowledge are valued. This is consistent with knowledge-sharing efforts that typically focus on organizational objectives such as improved performance, competitive advantage, innovation, the sharing of lessons learned, and continuous improvement of the organization (Hassan & Raziq, 2019).

Knowledge storage is a third effective mechanism focused on in STC Bahrain. The effectiveness of knowledge storage in STC is evident from the

protective procedures for the knowledge stored online against any cyber-attacks. Protecting the knowledge stored online against cyberattacks is a means that increases the useability of this knowledge and creates more trust in the company by its internal and external stakeholders. This is consistent with the conclusions of Henttonen et al. (2016). STC focuses on facilitating the process of recalling the stored knowledge at any time to be shared from the online sites. Accessibility of the stored knowledge online facilitates the retention of this knowledge. This is in line with the conclusions of Paliszkiewicz et al. (2017).

STC recognizes the significance of knowledge implementation. Managers provide their employees with continuous feedback about knowledge implementation effectiveness. This shows that employees and leaders are involved in the knowledge implementation process. This is consistent with the findings of (Hassan & Raziq, 2019). In STC, employees' knowledge is implemented for making change happen in my organization. This ensures that knowledge is a means for improving the performance of the organization. This means that knowledge management became an effective tool that could be employed by those organizations that seek to operate at a high level of performance and to achieve the maximum satisfaction of all customers (Curado & Vieira, 2019).

Dynamic managerial capabilities are given due care in STC Bahrain. In light of the knowledge-based theory, dynamic managerial capabilities represent a source of competitiveness (Ambrosini & Altintas, 2019). Dynamic capabilities can be observed within individual managers, particularly those in the top management (Curado & Vieira, 2019). However, STC improves the dynamic managerial capabilities of all its employees. One issue that ensures the significance of the dynamic managerial capabilities in STC is that the characteristics of managers in STC are charismatic. In addition, there are clues that there is an increase in the levels

of participation of top and intermediate managers in the decision-making process. This is consistent with the conclusions of Abker et al. (2019) ; and Chen et al. (2016).

There is a strong and positive correlation between all the knowledge Management processs in STC and dynamic managerial capabilities in STC. The strongest correlation is knowledge implementation and dynamic managerial capabilities. This is consistent with the conclusion of (Chiu & Chen 2016). The knowledge-based theory ensures the existence of the same correlation. This is evident from the conclusions of (Dincer, 2017), which ensures that knowledge is considered an embedded issue that is transformed through numerous entities. In addition, it is declared that one of the most significant issues is carried out by managers who exert efforts to accumulate knowledge, protect this knowledge, and manage it in the best manner.

In STC, knowledge Management processs significantly and positively impact dynamic managerial capabilities in STC Bahrain. This impact is consistent with the knowledge-based theory and the writings that approached it (Aino et al., 2018). Though knowledge acquisition insignificantly impacts dynamic managerial capabilities, all the other mechanisms significantly and positively impact dynamic managerial capabilities. This is consistent with the conclusions of (Micha & Bohuslava, 2017) but not consistent with those (Bianchi et al., 2022).

It is proved that there is NO significant difference concerning the recognition of the impact of knowledge management on dynamic managerial capabilities in STC Bahrain attributed to the demographic variable (Gender-age- job-years of experience- education level- nationality). This is comparable to the findings of Fainshmidt and Frazier (2017). H2 is rejected.

5.3. Recommendations

The major recommendations were derived from this research's previous chapters, particularly the analysis, results and findings chapter and the main conclusions presented in the previous sub-section. The recommendations are categorized into the following:

- Recommendations for HR Management
- Recommendations for the communication sector, and
- Recommendations for Future Researchers.

5.3.1. Recommendations for HR Management

1- It is recommended that HR managers exert more effort to learn and develop within the context of their organizations and outside these organizations. They do post-graduate studies to acquire more knowledge in their majors and support their professional performance.

2- HRM is recommended to spot more light on the employees who enjoy managerial capabilities. Those individuals must be identified as early as the selection stage. Identifying those individuals gives the organization more opportunities to have better managers who can demonstrate advanced knowledge.

3- HRM specialists are required to focus on improving the knowledge Management processes within organizations through devising numerous schemes that encourage employees to manage their knowledge.

4- Improved training and development programs are to be planned for the employees from different levels to increase their acquired knowledge, share, store and implement it effectively.

5- HR managers need to explore novel means through which knowledge management processes can be better demonstrated in their companies.

6- HR managers are required to motivate employees to read about knowledge management processes to improve KM.

7- HR managers are required to recruit employees who demonstrate managerial capabilities.

5.3.2. Recommendations for communication sector:

1- The three telecommunication companies in Bahrain are required to spotlight the processes of knowledge sharing and the practices through which they can increase its effectiveness.

2- More attention needs to be paid to the emotional intelligence aspects of the managers in telecommunication companies. This is attributed to the increased contributions of emotional intelligence in establishing effective relationships between managers and employees.

3- Retaining qualified and competent managers is a major issue that must be concentrated on in the telecommunication companies in Bahrain, especially in the present era where competitors can attract competent managers.

5.3.3. Recommendations for future researchers:

1- More research can be conducted about effective dynamic managerial capabilities in the government sector in the kingdom of Bahrain.

2- Future research needs to investigate the relationship between knowledge management and employee performance in the telecommunications industry.

3- Future research needs to be carried out about the effectiveness of dynamic managerial capabilities on employee performance in the private sector in Bahrain.

5.4. Implications

5.4.1 Theoretical implications

The theoretical implications of the present research involve the researcher's success in introducing all linked theories to the two variables, knowledge management and dynamic managerial capabilities. Such theories are collected in the present research to provide the readers with an insight into what theories explain the two variables and their relationship and to help future researchers collect them in one study in this knowledge domain .

It is also possible that all the related body of literature exhibited in the second chapter be employed by the readers to establish a better background about the research topic and the two variables. It indicates how well the researcher demonstrates knowledge about the study domain.

5.4.2. Practical implications

The present research findings can be implemented by the Bahrain government bodies linked to the communication sector as the information affairs authority in Bahrain. All organizations in this sector can use the findings of this research.

The other two communication companies in Bahrain are likely to use the present research findings. This is attributed to the same nature of the companies and the same business environment they operate in .

Furthermore, HRM practitioners are more likely to exploit the research findings to learn more about the significance of knowledge management and dynamic managerial capabilities.

5.5. Research contributions

5.5.1 Theoretical contributions:

The results of the present research contribute to reinforcing the available literature about knowledge management, KM processes, KM models and how these can be related to dynamic managerial capabilities.

The results of the research enhance the existing literature about dynamic managerial capabilities and the concepts, models, and methods related to them.

5.5.2. Practical contributions:

Results of the research are expected to contribute to make Telecommunication companies in the GCC establish a better understanding of knowledge management process and their value in the organizational context.

The findings of the research can contribute to enhancing the understanding of telecommunication companies that compete STC in Bahrain about STC strategies and plans about knowledge management.

The findings of this study can contribute making private sector in Bahrain recognize the significance of dynamic managerial capabilities in supporting better competitive edge.

Outcomes of the research contribute to improving academicians' research about the impact of knowledge management process and dynamic managerial capabilities in different sectors.

5.5. Research Limitations

The fact is that no research is perfect. Therefore, there are research limitations that are associated with this research. This research is geographically limited to Bahrain and STC as a telecommunication company. This created a limited sample on which the research instrument was circulated. Accordingly, the

results and findings of this research might not be generalized to many other companies or sectors.

A third limitation apparent through the implementation of the research instrument is that it was based on self-reporting and a self-administered questionnaire. Such a type of instrument is usually associated with sampling bias and accuracy risk and is limited to the understanding ability of the respondent. There could be some triangulation in which interviews could have been incorporated with the questionnaire.

Related secondary data is sometimes not available or accessing available data is difficult/impossible. Quantitative research is expensive, time-consuming, and presents a limited understanding of consumer needs.

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Appendices

Appendix (1) Interview questions & results

1- What is knowledge management ?

2- Which knowledge management practices are adopted in your company?

3- How effective are the knowledge management practices that are adopted in your company?

4- How effective are dynamic managerial capabilities that are adopted in your company?

5- Do you think that knowledge management practices play a role in improving dynamic managerial capabilities in your company?

Results of question (1): 8 of the intervieww agreed that knowledge management can be defined as ““a system of acquiring, capturing, sharing, storing, developing, capitalizing, disseminating, and utilizing knowledge efficiently in organizations”. The other 2 interviewees did not hava a clear definition.

Results of question (2): 8 of the interviewees possess a clear backgrpund about the processes of KM. The eight interviewees said that KM processes include (knowledge acquisition- Knowledge storage- Knowledge sharing- Knowledge implementation.).

Results of question (3): 7 of the interviewees claim that the processes of (knowledge acquisition- Knowledge storage- Knowledge sharing- Knowledge implementation.) are highly effective in their company.

Results of question (4): 8 of the interviewees claim that the dynamic managerial capabilities agree that dynamic managerial capabilities represent the ability to achieve delivery or performance requirements as demonstrated by the proposed use of management and other personnel resources.

Results of question (4): 7 of the interviewees agree that knowledge management practices play a role in improving dynamic managerial capabilities in your company.

Appendix (2) Letter To Respondents

Dear Participant,

The undersigned is a student of master program in Bahrain University, Manama, Bahrain. This questionnaire is conducted as part in fulfilment of the requirements of my master's degree, supervised by Dr Asmaa Ayari. As a researcher, I intend to reach the key objective of this research, which is "to assess the impact of Knowledge Management on Dynamic Managerial capabilities in the Telecommunication Sector in Bahrain ". Your contribution by filling this questionnaire will be highly appreciated, Thank you in advance for taking time to participate in this survey. Your feedback is crucial, and all responses will remain completely confidential.

Please be free if you have any inquiries or concern about the survey, do not hesitate to contact me.

**Regards,
The researcher**

Appendix (3) Questionnaire for

Questionnaire Form

knowledge Management process and Dynamic Managerial capabilities in Telecommunication Sector. Case of STC Bahrain”

Section A: Participant profile:

Gender	Male	☐				☐	Female	☐
Age area	25 or below	☐	26-39	☐	40-59	☐	60 or more	☐
Job	Front desk Employee	☐	Supervisor	☐	Manager	☐	Senior manager	☐
Years of experience	5 or below	☐	6 -10	☐	11 - 19	☐	20 or more	☐
Education level	Secondary degree	☐	University graduate	☐	Diploma	☐	Post-graduation degree	☐
Nationality	Bahraini	☐	Non-Bahraini			☐		

SECTION B: The research variables

Please tick (✓) for the most appropriate answer in respect of the following items.

Strongly Disagree	Disagree	Neutral	Agree	Strongly
1	2	3	4	5

The independent variable: Knowledge management

No.	ITEM	Please Tick (/)				
Knowledge acquisition		1	2	3	4	5
1	In my organization, there are various opportunities to acquire the needed knowledge.					
2	Knowledge is provided in my organization via training on the job and out the job.					
3	My organization always seeks to support the employees' knowledge by providing them with the latest articles about their jobs' requirements.					
4	Employees are encouraged to study and gain more degrees by the management of my organization.					
5	My organization has short-term and long -term plans to enhance employee's knowledge.					
Knowledge sharing						
6	There is a computerized system through which knowledge can be shared.					
7	Distinct employees in sharing their knowledge are valued.					
8	Employees are encouraged to share what they know about work requirements.					
9	Employees who receive out-job training are required to hold meetings to share what they have acquired. Knowledge sharing is part and parcel of the company's culture.					
10	The ability to share knowledge is a component of the employees' performance appraisal.					
Knowledge storage						

11	There are traditional and digital processes to create and store knowledge in my organization.					
12	There is an I-cloud storage capacity for whatever knowledge employees create and possess.					
13	knowledge that is stored online is accessible by all the employees in my organization.					
14	There are protective procedures for the knowledge stored online against any cyber-attacks.					
15	Employees' knowledge can be recalled at any time to be shared from the online sites.					
Knowledge implementation						
16	Employees' knowledge is implemented for making change happen in my organization.					
17	There are plans and instruments that grant systematical and adequate implementation of the employees' knowledge.					
18	Not only employees but also the leadership are involved in the knowledge implementation process.					
19	There is continuous feedback from my organization management regarding the knowledge implementation context.					
20	Everyone in my organization is involved in building a knowledge implementation map.					

The dependent variable: Dynamic Managerial capabilities

1	My organization attracts and retains highly qualified and competent managers.					
2	Managers in my organization achieve better total control of the organization's general performance.					
3	The organization managers perceive new opportunities and potential threats.					
4	My managers develop and communicate the organization's purpose in a clear way to which all members can relate.					
5	My managers resolve conflicting opinions.					
6	Managers in my organization improve coordination and effective collaboration between key executives.					
7	Managers generate enthusiasm, and motivate the high management unit sufficiently to achieve improved performance.					

8	My organization managers develop a system of strategic plans throughout the organization that is effective for the organization's general development.					
9	My managers develop training programs for the organization's members.					
10	The use of management by objectives has increased in the organization.					
11	The use of financial accountability reporting has increased.					
12	The participation of top and intermediate managers in the decision-making process has increased.					
13	The extensive, effective use of quantitative techniques in decision making has increased.					
14	The extensive, effective use of quantitative techniques in decision making has increased.					
15	The organization managers can address different types of challenges.					
16	My managers are able to deal with crises effectively.					
17	My managers demonstrate tacit and explicit knowledge.					
18	Managers in my organization are charismatic.					
19	Managers in my organization are able establish effective relationships with the employees.					
20	My organization managers are emotionally intelligent.					

Appendix (4) Abstract in Arabic

الهدف من الدراسة: يهدف هذا البحث إلى تقييم أثر عمليات إدارة المعرفة التي تشمل (اكتساب المعرفة - تخزين المعرفة - تبادل المعرفة - تنفيذ المعرفة) على القدرات الإدارية الديناميكية في شركة الاتصالات السعودية في البحرين.

التصميم / المنهجية: تستخدم الدراسة المنهجية الكمية لتنفيذ هذا البحث بالإضافة إلى الأسلوب الوصفي، استخدم البحث آلية أخذ العينات الملائمة، وشملت العينة 192 موظفاً في شركة الاتصالات السعودية بالبحرين. تم جمع البيانات من خلال دراسة استقصائية تضمنت 40 فقرة. تم تحليل البيانات التي تم جمعها بواسطة SPSS الإصدار 28. تم تحليل البيانات من خلال بعض الاختبارات الإحصائية مثل الاختبارات الإحصائية الوصفية وتحليل البيانات الاستنتاجية.

النتائج: توصلت الدراسة إلى أنه يوجد تأثير ذو دلالة إحصائية لعمليات إدارة المعرفة على القدرات الإدارية الديناميكية. كما أنه لا توجد فروق ذات دلالة إحصائية تتعلق بتصور تأثير إدارة المعرفة على القدرات الإدارية الديناميكية في شركة الاتصالات السعودية في البحرين يُعزى إلى المتغيرات الديموغرافية (الجنس - العمر - سنوات الخبرة - المستوى التعليمي - الجنسية).

توصي بأن يبذل المديرون المزيد من الجهود للتعليم والتطوير في سياق مؤسساتهم وخارج هذه المؤسسات. كما توصي بأن يتم تنفيذ دراسات من قبل مديرو الموارد البشرية من أجل اكتساب المزيد من المعرفة في تخصصاتهم ودعم أدائهم المهني.

الكلمات المفتاحية: إدارة المعرفة ، اكتساب المعرفة ، تخزين المعرفة ، تبادل المعرفة ، تنفيذ المعرفة ، القدرات الإدارية الديناميكية

جامعة البحرين



قسم الإدارة والتسوية

كلية إدارة الأعمال

نحو فهم تأثير عمليات إدارة المعرفة على القدرات الإدارية الديناميكية في شركة الاتصالات السعودية البحرين

أطروحة مقدمة كجزء من متطلبات الحصول على درجة الماجستير في إدارة الموارد البشرية

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جامعة البحرين

مملكة البحرين

سبتمبر 2023

جامعة البحرين



قسم الإدارة والتسويق

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