

**College of Business  
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# **Learning Organization Dimensions and Its Impact on Organizational Performance: An Empirical Study in Bahrain Public Sector**

Thesis Submitted in Partial Fulfillment of the Requirements for the  
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# Abstract

**Purpose** – The topic of learning organizations has been under discussion for decades, but few studies have touched on the learning organization in the public sector. This study explores the applicability of implementing a governmental learning organization in Bahrain and identifying the relationship between the learning organization dimensions and organizational performance.

**Design/ methodology/ approach** – An empirical study has been applied to collect data from 136 representatives of the public sector according to the cluster sampling technique. The research conceptual model was composed of eight independent variables: continuous learning, inquiry and dialogue, team learning, embedded systems, empowerment, system connectivity, strategic leadership, and digitalization strategy. The study instrument was the Dimensions of the Learning Organization Questionnaire, which measures the respondents' perceptions of the learning organization dimensions on a 6-point Likert scale. The data have been analyzed mainly by IBM SPSS Statistics (version 22) to extract the study findings.

**Findings** – The study reveals the significant relationship between organizational performance in the public sector and almost all learning organization dimensions, including continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic leadership, and digitalization strategy. Hence, the learning organization is applicable in Bahrain's public sector. The most important dimensions for high organizational performance are digitalization strategy, system connectivity, and strategic leadership.

**Research limitations** – The respondent must be aware of the organization's internal environment to answer the questions fully and fairly. Hence, the findings represent top and middle management's perception in the public sector only, which comprise the study's main limitation.

**Originality/ value** – The findings enrich the organizational development field in general and the public sector in particular. The study findings are closely related to the characteristics of the public sector and its cultural differences. Therefore, the study has some practical implications for scientific research in the same field, and policymaking, decision-making, and human resource management practices in the governmental organizations in Bahrain. In addition, similar organizations in the Gulf Cooperation Council and the region can benefit from the study findings as well. The main recommendations of this study are to adopt the learning organization as a proactive strategy in the public sector, and to consider digitalization as a primary dimension to maintain a governmental learning organization.

**Keywords:** Learning Organization, DLOQ, Knowledge Management, HRM, Public Sector, Government, Bahrain, Digitalization, Continuous Learning, Inquiry and Dialogue, Team Learning, Embedded Systems, Empowerment, System Connectivity, Strategic Leadership

# Dedication

To those who took care of me and cared for me,  
my mother and my father,  
to my dear brother and sisters,  
to who accompanied me in my study journey, my most beloved friend  
Mona,  
to everyone who supported and encouraged me despite all the difficulties,  
and everyone who provided me with knowledge and ethics over the years.  
I dedicate this humble work; perhaps it has become a useful building  
block of knowledge.

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## Abbreviations and Acronyms

|              |                                                  |
|--------------|--------------------------------------------------|
| ADB          | Asian Development Bank                           |
| BI           | Business Intelligence                            |
| CFA          | Confirmatory Factor Analysis                     |
| CL           | Continuous Learning                              |
| DLOQ         | Dimension of Learning Organization Questionnaire |
| DS           | Digitalization Strategy                          |
| EGDI         | E-government Development Index                   |
| E-Government | Electronic Government                            |
| EM           | Empowerment                                      |
| ES           | Embedded Systems                                 |
| GCC          | Gulf Cooperation Council                         |
| HRD          | Human Resource Development                       |
| HRM          | Human Resource Management                        |
| ID           | Inquiry and Dialogue                             |
| KSU          | King Saud University                             |
| L&D          | Learning and Development                         |
| LO           | Learning Organization                            |
| MIS          | Management Information System                    |
| MLQ          | Multi-Leadership Questionnaire                   |
| OP           | Organizational Performance                       |
| PSP          | Public Service Platforms                         |
| ROA          | Return On Assets                                 |
| ROE          | Return On Equity                                 |
| ROI          | Return On Investment                             |
| SC           | System Connectivity                              |
| SDG          | Sustainable Development Goal                     |
| SEM          | Structural Equation Modeling                     |
| SL           | Strategic Leadership                             |
| SMEs         | Small and Medium-sized Enterprises               |
| TL           | Team Learning                                    |

# CHAPTER ONE

## INTRODUCTION

# CHAPTER ONE

## INTRODUCTION

### **1.1 Background**

The current environment is rapidly changing, requiring prompt adaptation and proactive organizational development (Kim, Egan, & Tolson, 2015). In the field of organizational development, human resource development (HRD) or human resource management (HRM) is concerned with providing development and learning opportunities that support corporate strategies and performance improvement at the individual, team, and organizational levels (Ani & Andrew, 2006). Organizational development techniques seek to improve organizational effectiveness and employee well-being (Robbins & Judge, 2013).

Building a learning organization (LO) is an important area of organizational development, and it can be a lifetime HRD project. Many challenges and opportunities arise (Al-Qutop, Futa, & Ma'ani, 2011) for private and public sectors worldwide. The main challenges are the need to alter the culture, behavior, and characteristics of the traditional organizations, while the main opportunities and benefits are increased work satisfaction (Dekoulou & Trivellas, 2015) and organizational responsiveness to change (Hussein, Omar, Noordin, & Ishak, 2016).

The challenges and opportunities of LO differ between the private and public sectors. In the private sector, the environment includes mainly new customer demands and intense competition. Observing the behavior of public sector organizations reveals many problematic symptoms, such as growing national and international expectations, expanding workloads, and continued resource constraints (Ratna, Khanna, Jogishwar, Khattar, &

Agarwal, 2014; United Nations b, 2018), in addition to rigid operations, traditional training programs, and slow service provision and complaint handling. Such symptoms emphasize the need for radical organizational development while keeping high organizational performance.

The importance of organizational performance has evolved, but the concept has kept the same elements in the 21st century, which are “effectiveness,” “efficiency,” and “relevancy” (Jenatabadi, 2015). Thus, it is common to find many studies that link LO to organizational innovation and performance (Hussein, Omar, Noordin, & Ishak, 2016).

The topic of LO has been under discussion among researchers and experts in multiple fields for nearly three decades (Qehaja, Kutlllovci, & Havolli, 2017; Ortenblad, 2019). They have proposed some characteristics, drivers, and processes that support building and developing a LO. In addition to models and measurement instruments for both diagnostic and study purposes. Starting with Senge (1990) book, and ending with Ortenblad (2019) book, you can find a great evolution of the LO concept.

Actually, the research on organizational development in the context of LO is rich. However, a research gap still exists in some aspects (Ambula, Awino, & Obonyo, 2016), especially in the public sector, since the number of published empirical studies is limited (Perfetti, 2016).

## **1.2 Research Problem**

Despite the increased emphasis on performance in the public sector and their willingness to provide better citizen services, only few public sector institutions have clearly sought to become LOs.

Regardless of the wide variety of the learning organization’s contributions to the organization itself and the community in general, there

is a lack of studies that mention governmental organizations and public sector institutions as an environment conducive to the application and practice of LO. Moreover, there is a lack of publications in this area in Bahrain.

Hence, there is a need to examine the LO model's application in the public sector and its impact on organizational performance.

### 1.3 Research Questions

The following major and minor questions are addressed:

Main question: Is LO applicable in the public sector?

Minor questions:

1. Is there a relationship between **continuous learning** and performance?
2. Is there a relationship between **inquiry and dialogue** and performance?
3. Is there a relationship between **team learning** and performance?
4. Is there a relationship between **embedded systems** and performance?
5. Is there a relationship between **empowerment** and performance?
6. Is there a relationship between **system connectivity** and performance?
7. Is there a relationship between **strategic leadership** and performance?
8. Is there a relationship between **digitalization strategy** and performance?

### 1.4 Research Objectives

This research aims:

1. To explore the applicability of implementing a governmental LO.
2. To identify the significance of the relationship between LO dimensions and organizational performance.

### 1.5 Research Significance

Environmental challenges and opportunities, such as technological capabilities, globalization, national governance programs, and the

competition between the public and private sectors in serving people, enforce the public sector to shift from the traditional organizational model to a learning organization model, including the public sector in the Kingdom of Bahrain.

The concept of LO has been widely used as an accompaniment to performance, competitive advantage, innovation, and survival (Hussein, Mohamad, Noordin, & Ishak, 2014; Hussein, Omar, Noordin, & Ishak, 2016). Strategically, organizational learning has become a mechanism for change and renewal (Diaz-Fernandez, Pasamar-Reyes, & Valle-Cabrera, 2017).

Because of the lack of empirical tests in the public sector (Perfetti, 2016), studying the applicability of the LO model in the public sector and its relationship with performance would significantly affect policymakers, decision-makers, and the public sector as a whole.

This study is significant because it will assist the public sector in Bahrain and similar sectors in the Gulf Cooperation Council (GCC) countries (Bahrain, Kuwait, Saudi Arabia, United Arab Emirates, Oman, and Qatar) and the region. It is more relevant to this sector than other general studies, since it reflects the sector characteristics and challenges (Thom & Reilly, 2015; Dewah & Mutula, 2016; Perlman, 2016). It fills the gap in the existing research and hopefully paves the way for further studies in the same area.

## **1.6 Research Method**

This research is exploratory in nature. To achieve the research objectives, a deductive research process was applied in collecting the empirical data. A mixed design approach was used to collect data from the research clusters, including a self-administered survey, a personal

interview survey, and secondary data sources. The Dimensions of Learning Organizations Questionnaire (DLOQ), which measures the respondents' perceptions of the LO dimensions on a 6-point Likert scale, was the study instrument. The data were mainly analyzed with IBM SPSS Statistics (version 22) to extract the study findings.

## **1.7 Research Limitations**

The study has three key limitations, and its results must be seen in light of them. First, a questionnaire respondent must be aware of the organization's internal environment to answer the questions fully. Accordingly, only those in top and middle management positions in the public sector were targeted as respondents. Second, participation was voluntary, so only the managers who agreed to contribute to this research were interviewed. Finally, the data collection was conducted at the end of 2020. This year coincided with the coronavirus pandemic spread, which affected measurements of organizational performance during the analysis.

## **1.8 Research Structure**

This study consists of six chapters. It starts with an introduction to the topic. The second chapter provides the literature review, while the third chapter presents the methodology used. The analysis and findings are offered in the fourth chapter, and the findings are discussed in the fifth chapter. Finally, the conclusion outlines the study limitations, recommendations, and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

## CHAPTER TWO

### LITERATURE REVIEW

The current environment is rapidly changing, bringing new challenges to organizations (Robbins & Judge, 2013) in both the public and private sectors. Without any exception, these challenges face all governments, including the government of the Kingdom of Bahrain. Bahrain has worked intelligently to achieve economic and social development (United Nations a, 2018) guided by Bahrain Vision 2030, but there are still many opportunities ahead.

To achieve notable developments and deal with environmental change, organizations have been forced to shift from the traditional organizational model to an LO model. This is due to the importance of learning at the individual, team, and organizational levels (Odor & Samuel, 2018).

The literature about LOs is informative. Researchers have recommended definitions, models, and instruments that support building and developing a LO. It is a global practice, applicable in different industries, countries, and managerial positions, whether as a goal or a factor of organizational performance (Santa, 2015).

The topic of LOs has been under discussion among researchers and experts in multiple fields for nearly three decades (Qehaja, Kutllovci, & Havolli, 2017; Ortenblad, 2019), so let's take a look at what the literature has mentioned on this topic. Accordingly, this chapter covers six sub-sections: Bahrain Public Sector, Learning in the Organization, Learning Organization, Learning Organization Cases, Learning Organization and Performance, and the Research Framework.

## **2.1 Bahrain Public Sector**

The public sector or governmental sector refers to institutions or organizations “under state control that are established to serve the needs of the general public”. The public sector provides services to the citizens and residents, thus producing not profit, but “public value” (Dewah & Mutula, 2016, p. 363).

Despite the difficulties in comparing the public with the private sector (Thom & Reilly, 2015), some researchers have pinpointed the public sector's challenges compared to the private sector. Generally, public sector challenges include bureaucratic and rigid operations, shortage of skills, lack of incentives or rewards, lack of advanced technology, lack of appropriate models or “brain drain”, and finally, the culture and lack of a knowledge-sharing environment (Dewah & Mutula, 2016). Hence, the public sector is increasingly either in competition or in collaboration with the private sector (Ranerup, Henriksen, & Hedman, 2016). These challenges face all governments, including the government in the Kingdom of Bahrain.

The Kingdom of Bahrain is a group of islands located in the Arabian Gulf in the Middle East. It is a member of the GCC. Politically, Bahrain has been a constitutional monarchy since 2002, with a democratically elected parliament, and has a respected legal framework and a regulatory system. Since the introduction of the constitutional monarchy, Bahrain has begun a period of ongoing reformation (Information and eGovernment Authority, 2020).

Bahrain has witnessed notable economic development. As the first Gulf state to discover oil in 1932, but with limited resources, Bahrain has worked intelligently to diversify its economy over the past five decades.

Subsequently, Bahrain has become a regional financial hub and business center. Its manufacturing, logistics, communications, professional services, and real estate sectors have also evolved (Information and eGovernment Authority, 2020; World Heritage Committee 2018, 2019).

The development of the Bahraini public sector, along with that of the private sector and the whole society, is guided by Bahrain Vision 2030, launched by His Majesty King Hamad bin Isa Al Khalifa to serve as a shared vision. Based on the need for coordinated national, regional, and global development, it focuses on three guiding principles: sustainability, fairness, and competitiveness (The Economic Vision 2030 For Bahrain, 2008). These principles are aligned with United Nations Sustainable Development Goals (SDG) Agenda (United Nations b, 2018). The Vision lists Bahrain’s aspirations for the economy, government, and society, and the actions required to attain them, along with the potential measures of success (The Economic Vision 2030 For Bahrain, 2008). Figure 2.1 expresses Bahrain Vision 2030.

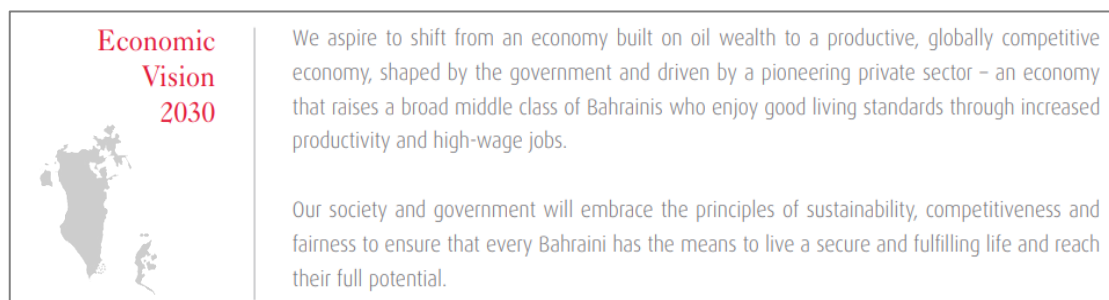


Figure 2. 1  
Bahrain Vision 2030

There are around 75 ministries and governmental entities in Bahrain (EGovernment, 2020), which serve a population of approximately 1.5 million according to 2020 statistics (Information and eGovernment Authority, 2020). Bahrain scores “very high” on the E-government Development Index (EGDI), which is “a weighted average of normalized scores on the three most important dimensions of e-government”. It ranks

26th globally, 5th in Asia, and 2nd in GCC (United Nations a, 2018). It is a rapidly improving country. The government has evolved remarkably in terms of quality of services, the efficient use of financial and human resources, and other respects (Mahmood, Weerakkody, & Chen, 2019).

## **2.2 Learning in the Organization**

Learning is the “continuous reorganization and reconstruction of experience” according to John Dewey’s theory of learning from experience (Babnika, Šircab, & Dermolb, 2014, p. 180), or it is “any relatively permanent change in behavior that occurs as a result of experience” (Robbins & Judge, 2013, p. 715). It occurs at an individual level. At a broader level, the learning may occur within the whole organization. In that case, it is called organizational learning, which refers to the “process that enables collaboration between organizational actors to improve the organization’s overall performance” (Brix, 2017, p. 114). While learning occurs at the individual level, organizational learning is more than the sum of the individual learner’s knowledge acquisitions (Senge, 1990; Sinclair, 2016).

Once learning is linked to HRM, it is called learning and development (L&D), which refers to the “process of ensuring that the organization has the knowledgeable, skilled and engaged workforce it needs” (Armstrong & Taylor, 2014, p. 284). According to Armstrong et al. (2014), the components of L&D are:

- Learning – “the process by which a person acquires and develops knowledge, skills, capabilities, behaviors, and attitudes.”
- Development – “the growth or realization of a person’s ability and potential through the provision of learning and educational experiences.”

- Training – “the systematic application of formal processes to impart knowledge and help people to acquire the skills necessary for them to perform their jobs satisfactorily.” Training is what the organization undertakes to promote learning.
- Education – “the development of the knowledge, values, and understanding required in all aspects of life rather than the knowledge and skills relating to particular areas of activity.”

Since HRM is concerned with investing in people and developing the organization’s human capital through L&D strategies and policies, learning plays a strategic role in achieving organizational goals (Armstrong & Taylor, 2014). Accordingly, organizations are encouraged to shift from traditional training styles to dynamic, actively learning, knowledge-enabled organizations (Asian Development Bank, 2009).

Organizational learning involves five stages: knowledge acquisition; knowledge sharing; knowledge interpretation; knowledge maintenance; and finally, knowledge utilization (Odor & Samuel, 2018), which involves the same concerns as knowledge management (Armstrong & Taylor, 2014; Dewah & Mutula, 2016).

Theories relating to the learning process emphasize the continuous nature of learning knowledge (Raide’n & Dainty, 2006; Brix, 2017), in addition to its multi-level form. In other words, it is a dynamic process that occurs over time across the individual, group, and organizational levels, creating personal, collective, and organizational knowledge (Brix, 2017; Odor & Samuel, 2018). The literature supports this concept, and many researchers think that since firms focus on efforts that promote learning at the individual, team, and organizational levels, the phenomena deserve investigation (Ambula, Awino, & Obonyo, 2016; Odor & Samuel, 2018).

Accordingly, all organizations learn naturally (Griego, Geroy, & Wright, 2000; Robbins & Judge, 2013), but some just do it better than others. Most organizations are engaged in single-loop learning, which refers to the “process of correcting errors using past routines and present policies”, whereas superior organizations use double-loop learning, in which correcting errors is made by “modifying the organization’s objectives, policies, and standard routines” (Robbins & Judge, 2013, p. 639). Single-loop learning does not require a change in people's perceptions of or beliefs about the organization, while double-loop encourages accepting new or different perspectives (Chajnacki, 2007). Some authors have gone further and discussed triple-loop learning, in which organizations correcting their status “arrive at renewed statements of identity, values, culture, and worldview that may even impact their external environment” (Asian Development Bank, 2009, p. 12).

Odor et al. (2018) reviewed both organizational learning and learning organizations. They concluded that organizational learning is part and parcel of a learning organization’s corporate culture (Odor & Samuel, 2018). However, “organizational learning” and “learning organization” seem to be two sides of the same coin (Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004), although it is important to note that there is a difference between learning organizations and organizational learning (Griego, Geroy, & Wright, 2000; Odor & Samuel, 2018; Watkins & Kim, 2018).

While organizational learning is the proficiencies and processes of knowledge development, the learning organization can be seen as the goal to be achieved. But another way, organizational learning is the answer to “how,” and the learning organization is the answer to “what” (Griego,

Geroy, & Wright, 2000; Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004; Odor & Samuel, 2018).

## **2.3 Learning Organization**

### **2.3.1 Learning Organization Definitions**

Definitions associated with LO models span 12 years and include both similarities and a few notable differences (Pedler, Burgoyne, & Boydell, 1991; Chajnacki, 2007), possibly because authors have defined the LO from different perspectives (Elshafie, 2018).

According to Peter Senge, the father of LO, who first offered a definition in 1990, a learning organization is an “organization where people continually expand their capacity to create the results they truly desire, whereby new patterns of thinking are nurtured, collective aspirations are freed, and people learn to learn together” (Senge, 1990, p. 8). Senge (1990) tried to differentiate learning organizations from traditional organizations.

One year later, Pedler et al. (1991) introduced the term “learning company”, and defined it as “the organization that facilitates the learning of all of its members and continuously transforms itself” (Pedler, Burgoyne, & Boydell, 1991). Here, Pedler et al. (1991) used the term “company” but defined it as “organization”.

More recently, the term LO was defined from an organizational behavior perspective as “an organization that has developed the continuous capacity to adapt and change” (Robbins & Judge, 2013, p. 639). From this viewpoint, LO becomes an approach to create a culture for change. Table 2.1 lists the most famous definitions related to LO. In addition to the definition, these authors developed some well-known LO models, which are introduced in section 2.3.3.

Table 2. 1

## Learning Organization Definitions

Source: Chajnicki, G. (2007). Characteristics of Learning Organizations and Multi-Dimensional Organizational Performance Indicators: A Survey of Large, Publicly-Owned Companies. Pennsylvania State University, College of Education, Pennsylvania.

| Author                         | Definition                                                                                                                                                                                                                                                                                              |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Senge (1990)                   | “Learning organizations are organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.” |
| Pedler et al. (1991)           | “A learning company is an organization that facilitates the learning of all of its members and continuously transforms itself.”                                                                                                                                                                         |
| Watkins & Marsick (1993; 2003) | “A learning organization is one that learns continuously and transforms itself... it proactively uses learning in an integrated way to support and catalyze growth for individuals, teams, entire organizations, and the institutions and communities with which they are linked.”                      |
| Redding & Catalanello (1994)   | “Learning organizations are firms that aggressively and systematically work to develop their learning capacity and their ability to continuously adapt to change and transform themselves.”                                                                                                             |
| DiBella & Nevis (1998)         | “The learning organization is characterized as having the capability to adapt to changes in its environment and to respond to lessons of experience by altering organizational behavior.”                                                                                                               |
| Garvin (2000)                  | “A learning organization is an organization skilled at creating, acquiring, interpreting, transferring, and retaining knowledge, and at purposefully modifying its behavior to reflect new knowledge and insights.”                                                                                     |
| Marquardt (2002)               | “A company that learns effectively and collectively and continually transforms itself for better management and use of knowledge; empowers people within and outside the organization to learn as they work; utilizes technology to maximize learning and production.”                                  |

There are five critical elements of any definition of LOs: (i) an LO learns consciously; (ii) an LO learns continually; (iii) an LO highlights experience as a source of learning; (iv) an LO improves practice; and (v) an LO is built around people (Asian Development Bank, 2009).

Santa (2015) theoretically studied LO in his study “Learning Organization Review – a ‘Good’ Theory Perspective”, and he gathered a

total of 29 definitions of LO. He concluded that authors used natural language and vague or ambiguous terms in their definitions, such as “accelerate,” “conscious,” “skilled,” “flexible,” “committed,” “encouraging,” and “facilitates.” In addition, he listed the main terms used in the definitions, and sorted them from the most used term to the least. The term “learning” was ranked first, with 46 uses, followed by “organization” or “organization” at 28 and “continuous” at 18. Table 2.2 shows Santa’s (2015) list of terms that guide the LO concept structure (Santa, 2015).

Table 2. 2  
LO definition Terms

Source: Santa, M. (2015). Learning organisation review – a “good” theory perspective. The Learning Organization, 22(5), 242-270. doi:10.1108/TLO-12-2014-0067

| <b>Terms used in the definiens</b>                                                                                                              | <b>No. of times</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Learning                                                                                                                                        | 46                  |
| Organisation                                                                                                                                    | 28                  |
| Continuous                                                                                                                                      | 18                  |
| Knowledge                                                                                                                                       | 14                  |
| Individual                                                                                                                                      | 11                  |
| Change                                                                                                                                          | 10                  |
| Processes                                                                                                                                       | 9                   |
| Systems                                                                                                                                         | 9                   |
| Structure                                                                                                                                       | 8                   |
| Adapt, behavior, capacity, create, improve, new                                                                                                 | 7                   |
| Itself, members, results                                                                                                                        | 6                   |
| Environment, facilities, people, reflect, transforms                                                                                            | 5                   |
| Acquire, do, employees, information, insight, level, promotes, skilled, used, work                                                              | 4                   |
| Collective, competitive, develop, embedded, expand, important, increase, performance, place, product, purposefully, rapid, strategy, take, team | 3                   |

### **2.3.2 Learning Organization Characteristics, Benefits, and Challenges**

Senge (1990), as well as other authors, have studied the characteristics of LOs (Griego, Geroy, & Wright, 2000), and most scholars agree that the development of such organizations involves “actionable outcomes” (Chajnacki, 2007).

These characteristics are training and education, rewards and recognition, individual and team development, information flow, vision and strategy (Griego, Geroy, & Wright, 2000). In addition, there is information technology (Altinay, Dagli, & Altinay, 2016), which is embedded in all the listed characteristics. LOs are characterized by people’s involvement in the process, and by changes directed toward a shared vision or values (Asian Development Bank, 2009). LOs can be recognized in terms of organizational structure and culture, information systems, human resources practices, and leadership (Odor & Samuel, 2018).

Lyle (2012) suggested that the LO includes at least four characteristics: it develops both individual and collective knowledge, it learns to improve performance and boost competitive advantage, and it continuously enhances its capacity to fit into its external environment (Lyle, 2012). Ratna et al. (2014) elaborate on the four characteristics of a LO that boost organizational performance. First, the organization focuses on the team, processes, and programs of the organization. Second, it creates and sustains a healthy and influential results-oriented culture. Third, it offers systemic and periodic rewards. Finally, it obtains feedback to learn and improve strategy (Ratna, Khanna, Jogishwar, Khattar, & Agarwal, 2014).

If one looks at the LO as a building, it can be said to be constructed of four subsystems: organization, people, knowledge, and technology (Chajnacki, 2007; Asian Development Bank, 2009). The Asian Development Bank (ADB) argues that “each subsystem supports the others in magnifying the learning as it permeates across the system”. Hence, a LO requires a balance among planning, acting, reflecting, and learning (Asian Development Bank, 2009).

Developing an LO is encouraged because of its benefits and the opportunities it creates. The benefits accrue to individuals, organizations, and society (Asian Development Bank, 2009). A LO increases commitment and work satisfaction, staff involvement in the organizational processes, pleasure in the work environment, and transparent communication (Dekoulou & Trivellas, 2015). It also enhances an organization’s competitive advantage and responsiveness to change (Hussein, Omar, Noordin, & Ishak, 2016). The LO concept is frequently linked to innovation, job satisfaction, and high performance (Hussein, Mohamad, Noordin, & Ishak, 2014; Dekoulou & Trivellas, 2015; Hussein, Omar, Noordin, & Ishak, 2016). Individuals who are active and keen to learn and share knowledge are valuable to the organization they work in and the society they belong to because they are “active citizens in a constantly changing world” (Asian Development Bank, 2009).

Leveraging LO benefits, is not easy since a LO cannot be built overnight (Garvin, 1993), and the structures, culture, behavior, and characteristics of traditional organizations often differ substantially from those essential in LOs (Senge, 1990). LOs “cannot be created by applying a formula”, but can be evoked by practice (Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004). Barriers such as lack of understanding of the importance of LOs, a lack of commitment by organization members to

accept the values of LOs, and the lack of infrastructure needed to build a LO (Hardianto, Setyanto, Kiritin, Mayasari, & Mayasari, 2017), may hinder leveraging LO benefits.

The ADB documented a detailed case study about LOs, including the challenges faced in the process of building one. One of the challenges of building or promoting a LO is ensuring leadership support for knowledge management and learning. Organizational "silos" exist in large structured organizations, where each department works in isolation from others. In addition, the ADB noted the challenge of mobilizing knowledge or the flow of knowledge from inside and outside, as well as of creating incentives for staff involvement in knowledge management and learning. Last but not least, it mentioned maximizing learning from evaluation, since this is the most under-used source of learning (Asian Development Bank, 2009).

But these challenges are not blockers, and can be overcome through the cooperation between policymakers, leaders, teachers, trainers, developers, and the individual learner himself (Asian Development Bank, 2009).

### **2.3.3 Learning Organization Models**

Reviewing the literature shows there are many models for LOs. Each model is distinguished by its own elements, and some are supported with measurement instruments. They represent different perspectives on LOs that have evolved enormously over time. From theoretical to practical and from conceptual to actionable, the LO models are listed below.

#### **2.3.3.1 Senge's LO Model**

Peter Senge, the father of LO, proposed a LO model in his book *The Fifth Discipline*. His model integrated organizational learning and management practices. In 1990 he anticipated five disciplines or

techniques associated with a LO: systems thinking, mental models, personal mastery, team learning, and shared vision. He deliberates that discovering how to get people's commitment and capacity to learn at all levels in an organization would achieve the organization's superiority in the future (Senge, 1990; Chajnicki, 2007; Ortenblad, 2019).

Despite Senge's contributions to the organizational learning field, there are some criticisms. Senge's model has been criticized as more theoretical than helpful (Perfetti, 2016), and as built on unrealistic ideas regarding the dialogue between management levels, the innovation in the workplace, and the loose boundaries in modern organizational systems (Chajnicki, 2007).

#### **2.3.3.2 Pedler, Burgoyne, and Boydell's Learning Company Model**

In 1991, Michael Pedler, John Burgoyne, and Thomas Boydell, in their book *The Learning Company*, proposed a model that integrated organizational designs and HRM functions to yield higher organizational performance levels. They used the term "learning company" to focus on an ad-hoc organizational structure and smoother accessibility among the stakeholders. This model involved eleven elements: a learning approach to strategy, participative policymaking, informing, formative accounting and control, internal exchange, reward flexibility, enabling structures, environmental scanning, inter-company learning, learning climate, and self-development or self-learning (Pedler, Burgoyne, & Boydell, 1991; Chajnicki, 2007).

#### **2.3.3.3 Watkins and Marsick's LO Model**

The most famous LO model is Watkins and Marsick's model. In 1993, Karen Watkins and Victoria Marsick introduced their view of LOs in their book *Sculpting the Learning Organization: Lessons in the Art and Science*

*of Systemic Change*. The theory was inspired by various older theories such as Lewin and Lewin's (1948) field theory, which emphasized the social context of learning; Argyris & Schön's (1978) organizational learning theory; and Schon's (1983) framing and reflection theory (Watkins & O'Neil, 2013)

Their model aims to set and develop practices to create a LO based on analysis of emerging LO. Their model consists of seven action imperatives: create continuous learning opportunities; promote inquiry and dialogue, encourage collaboration and team learning; establish systems to capture and share learning; empower people toward a collective vision, connect the organization to its community and environment; and finally, provide strategic leadership for learning. This last imperative was added in 1996 (Chajnacki, 2007; Kim, Egan, & Tolson, 2015).

The action imperatives are expected to occur at four different levels for an organization to be ready for continuous learning and transformation: individual level, including continuous learning and dialogue and inquiry, team level including collaboration and team learning, organization level, including empowerment and systems, and societal or global levels, including the connection to the environment and the strategic leadership (Alipour, Idris, Ismail, Uli, & Karimi, 2011; Kim, Egan, & Tolson, 2015).

In this model, the authors emphasize “diagnosis over prescription”, “culture over strategy”, “building capacities over one-off training”, and “organization-deep changes over what leaders need to do” (Watkins & Kim, 2018).

This model is supported by a measurement instrument called the Dimension of Learning Organization Questionnaire (DLOQ). Watkins and Marsick's (1996) model aligns with Senge's (1990), has been validated by

subsequent models, and has a heavily tested measurement instrument. It has therefore become the “best of the best” LO model (Chajnecki, 2007; Watkins & Kim, 2018).

#### **2.3.3.4 Redding and Catalanello’s LO Model**

in 1994, John Redding and Ralph Catalanello developed a model that links the concepts of strategic planning, change management, and organizational learning. Their model is an experiential learning cycle model that starts with the planning stage, followed by the action stage, and ends with the reflection stage (Chajnecki, 2007). The authors have argued that when an organization adopts the LO's characteristics, it should be in the state of readiness for change (Santa, 2015).

The model consists of 11 elements: learn from the past, anticipate future scenarios, develop a strategic vision, focus on immediate business issues, encourage experimentation, encourage cross-fertilization, institutionalizing change, provide opportunities for reflection, question underlying assumptions, generalize insights across the organization, and use learning to learn techniques (Chajnecki, 2007). In 1997, the authors developed the Learning Organization Capability Assessment as an assessment tool (Sinclair, 2016).

#### **2.3.3.5 DiBella and Nevis LO’s Model**

In 1998, DiBella and Edwin Nevis made a contribution by proposing a model that covers three perspectives: normative, developmental, and capability (Chajnecki, 2007; Santa, 2015). The authors think that a comprehensive method to engage in learning is appreciated, because there is no single way to do it. The model consists of 10 factors: scanning imperative, performance gap, concern for measurement, organizational curiosity, the climate of openness, continuous education, operational

variety, multiple advocates, involved leadership, and a systems perspective (Chajnacki, 2007).

#### **2.3.3.6 Garvin's LO Model**

In 2000, David Garvin rose the need for establishing a connection between the practice and the theocratical framework of LO. Garvin argued that Senge's work is far too abstract (Garvin, 1993; Kim, Egan, & Tolson, 2015). He sought to translate theories into practical procedures to ensure successful LO implementation, and therefore focused on a cognitive perspective. This included defining the LO and listing practical methods of building such organization (Garvin, 1993; Chajnacki, 2007).

Garvin's (2000) LO model comprises five dimensions: establish a learning environment, gather intelligence, learn from experience, provide experimentation opportunities, and develop learning leaders (Chajnacki, 2007). In 2008, Garvin, Edmondson and Gino introduced a diagnostic instrument to assess learning in the organization (Qehaja, Kutlllovci, & Havolli, 2017).

#### **2.3.3.7 Marquardt's LO Model**

The latest well-known LO model is the Marquardt model, which was developed in 2002. Michael Marquardt believed most advocates of LOs rely too heavily on organizational development initiatives, so he tried to develop a comprehensive system model. Marquardt's 2002 model consists of five subsystems: learning dynamics, organizational transformation, people empowerment, knowledge management, and technology support for learning. A Learning Organization Profile survey supports this model in handling organizational-level learning (Chajnacki, 2007; Perfetti, 2016; Qehaja, Kutlllovci, & Havolli, 2017).

Table 2.3 lists the LO models, along with the related elements, and the authors' measurement tool. These models complement each other, since they contain similar elements.

Table 2. 3  
Learning Organization Models

| Model                                | Elements                                           |                                                              |
|--------------------------------------|----------------------------------------------------|--------------------------------------------------------------|
| Senge (1990)                         | Five disciplines or techniques:                    |                                                              |
|                                      | 1. Systems thinking                                | 4. Team learning                                             |
|                                      | 2. Mental models                                   | 5. Shared vision                                             |
|                                      | 3. Personal mastery                                |                                                              |
| Pedler, Burgoyne, and Boydell (1991) | Eleven elements:                                   |                                                              |
|                                      | 1. Learning Approach to Strategy                   | 7. Enabling Structures                                       |
|                                      | 2. Participative Policy Making                     | 8. Environmental Scanning                                    |
| Measurement Tool:                    | 3. Informating                                     | 9. Inter-Company Learning                                    |
| The Learning                         | 4. Formative Accounting & Control                  | 10. Learning Climate                                         |
| Company                              | 5. Internal Exchange                               | 11. Self-Development for All Members                         |
| Questionnaire                        | 6. Reward Flexibility                              |                                                              |
| Watkins and Marsick (1993-1996)      | Seven action imperatives:                          |                                                              |
|                                      | 1. Create Continuous Learning Opportunities        | 5. Empower People Toward a Collective Vision                 |
| Measurement Tool:                    | 2. Promote Inquiry and Dialogue                    | 6. Connect the Organization to its Community and Environment |
| Dimension of                         | 3. Encourage Collaboration and Team Learning       | 7. Provide Strategic Leadership for Learning                 |
| Learning Organization                | 4. Establish Systems to Capture and Share Learning |                                                              |
| Questionnaire (DLOQ)                 |                                                    |                                                              |
| Redding and Catalanello (1994)       | Eleven elements:                                   |                                                              |
|                                      | 1. Learn from the Past                             | 7. Institutionalizing Change                                 |
|                                      | 2. Anticipate Future Scenarios                     | 8. Provide Opportunities for Reflection                      |
| Measurement Tool:                    | 3. Develop Strategic Vision                        | 9. Question Underlying Assumptions                           |
| Learning Organization                | 4. Focus on Immediate Business Issues              | 10. Generalize Insights Across the Organization              |
| Capability Assessment                | 5. Encourage Experimentation                       | 11. Learning to Learn Techniques                             |
|                                      | 6. Encourage Cross Fertilization                   |                                                              |
| DiBella and Nevis (1998)             | Ten factors:                                       |                                                              |
|                                      | 1. Scanning Imperative                             | 6. Continuous Education                                      |
|                                      | 2. Performance Gap*                                | 7. Operational Variety                                       |
|                                      | 3. Concern for Measurement                         | 8. Multiple Advocates                                        |
|                                      | 4. Organizational Curiosity                        | 9. Involved Leadership                                       |
|                                      | 5. Climate of Openness                             | 10. Systems Perspective                                      |
| Garvin (2000)                        | Five dimensions:                                   |                                                              |
|                                      | 1. Establish a Learning Environment                | 4. Provide Experimentation Opportunities                     |
| Measurement Tool:                    | 2. Gather Intelligence                             | 5. Develop Learning Leaders                                  |
| Learning Organization                | 3. Learn from Experience                           |                                                              |
| Survey                               |                                                    |                                                              |
| Marquardt (2002)                     | Five subsystems,                                   |                                                              |
|                                      | 1. Learning Dynamics                               | 4. Knowledge Management                                      |
| Measurement Tool:                    | 2. Organizational Transformation                   | 5. Technology Support for Learning*                          |
| Learning Organization                | 3. People Empowerment                              |                                                              |
| Profile                              |                                                    |                                                              |
| * Unique Element                     |                                                    |                                                              |

### **2.3.4 Measuring the Learning Organization**

Knowing LO models and their interactive elements as a part of the identification process is “necessary but is not sufficient” (Daryani, Ardabili, & Amini, 2014). Therefore, an organization seeking to be a LO must have a continuous process of measuring its current state and improving itself accordingly. Researchers have proposed many measurement instruments. The following paragraph lists the most renowned LO instruments. These instruments are primarily in the form of questionnaires, which are appropriate for application into business environments (Sinclair, 2016).

#### **2.3.4.1 The Learning Company Questionnaire (1990):**

Between 1991 and 1997, Pedler et al. worked on developing The Learning Company Questionnaire (Pedler, Burgoyne, & Boydell, 1991). It is a holistic and profound questionnaire, but it has not been scientifically tested. It is used to distinguish the LO characteristics. It consists of eleven scales which are rated on a seven-point Likert scale (Sinclair, 2016). Wilson et al. (2014) favored this instrument and used it because of its intermediate scale, popularity, coherence, and practicality (Wilson & Beard, 2014).

#### **2.3.4.2 Dimensions of the Learning Organization Questionnaire (DLOQ) (1993 & 2003):**

Among the considerable efforts to develop an instrument to measure LO, the best known is the Dimensions of the Learning Organization Questionnaire, or DLOQ (Kim, Egan, & Tolson, 2015).

The DLOQ grew out based on Watkins and Marsick's (1993) LO framework, suggested for the first time in their book *Sculpting the Learning Organization* (Kim, Egan, & Tolson, 2015). The DLOQ is a

Likert-type instrument that measures individual perceptions of organizational norms and expectations regarding seven LO dimensions (or variables) using either 43 or 21 items.

The full version with 43 measurement items has proven helpful as a comprehensive assessment and diagnostic tool for organizations to identify and decide where to mediate. While the shorter version contains 21 of the original 43 items, it still retains validity and reliability, although it is better suited for scholars as a research instrument (Leufvén, Vitrakoti, Bergström, KC, & Målvqvist, 2015).

The DLOQ has been subsequently validated in numerous studies. Hence, it has become the best instrument (Chajnacki, 2007; Watkins & Kim, 2018). Sinclair (2016) described it as a “holistic, profound, and tested” questionnaire (Sinclair, 2016).

Some researchers such as Kim, Egan and Tolson (2015) claim insufficient evidence to prove the seven dimensions measured in the DLOQ, limiting this tool's benefits (Kim, Egan, & Tolson, 2015). The instrument is a self-report measure and shares the limitations of all self-report questionnaires. Individuals may be biased, answer in a socially desirable way, or answer inaccurately based on the information known to them (Watkins & O'Neil, 2013).

#### **2.3.4.3 The Learning Organization Test (1996–2008):**

With a greater focus on organizational knowledge (Ranta, 2018), Ojala (1996) developed a quick test of LO consisting of 20 questions (Sinclair, 2016), which help in identifying the development items that will improve learning in the organization. It considers both the current state and the importance of the item to the respondent (Ranta, 2018). Unfortunately, the literature related to this test is limited.

#### **2.3.4.4 Learning Organization Diamond (2001)**

Raili Moilanen (2001) introduced the Learning Organization Diamond tool, which was based on an in-depth comparison between the LO measurement instruments. The purpose of developing this new instrument was to create a short and easily accessible questionnaire that presented a holistic view of the LO. Moilanen developed a model in the shape of a diamond, presented at two levels: the organization level and individual level. Therefore, his measurement instrument also has two sides. The tool measures five focuses: driving forces, finding the purpose, questioning, empowering, and evaluating. It includes a total of 40 statements, 20 of them related to the organizational level and 20 to the individual level (Moilanen, 2001).

Unfortunately, although Moilanen attempted to develop a holistic tool, the diamond tool is instead general, not comprehensive, and has failed to be as thoroughly tested (Perfetti, 2016). This is perhaps because he underestimated the impact of the group level in the learning process, as he stated that “the groups level was also considered, but it did not seem to offer any benefits” (Moilanen, 2001).

#### **2.3.4.5 Learning Organization Profile (2002):**

Marquardt (2002) designed an assessment tool called the Learning Organization Profile, which measures learning dynamics, organizational change, empowerment of employees, knowledge management, and technology use (Daryani, Ardabili, & Amini, 2014). However, it has limited uses as an assessment tool within the literature (Perfetti, 2016).

#### **2.3.4.6 Diagnostic survey of the learning organization (2008):**

In 2008, Garvin, Edmondson, and Gino introduced the diagnostic instrument of the LO, typically called the Learning Organization Survey,

to determine how well a firm operates as a LO and to identify what to improve. This tool can be used at any organizational level (Qehaja, Kutllovci, & Havolli, 2017; Youthrex Research & Development, 2020). The survey measures three building blocks: supportive learning environment, concrete learning practices, and leadership that reinforces learning (Ranta, 2018). It is a self-report questionnaire that targets managers and administrators. It consists of 51 items with a 5-point scale (Youthrex Research & Development, 2020).

### **2.3.5 Historical Evolution of the Learning Organization**

Learning within an organization started before Senge (1990) introduced the LO. He proposed terms that already existed in some previous form, but sometimes under different labels (Chajnacki, 2007) such as “organization where learning is taking place” by Argyris and Schon in their book *Organizational Learning*, published in 1978 (Ortenblad, 2019).

According to Song et al. (2008), the perspective of the LO is not a newly developed concept; the learning-related organization has gradually been given more focus, with the publication of three books: *Organizational Learning: Theory, Method and Practice* by Argyris and Schön (1978); *The Fifth Discipline: The Art and Practice of the Learning Organization* by Senge (1990); and *Sculpting the Learning Organization: Lessons in the Art and Science of Systemic Change* by Watkins and Marsick (1993) (Song, Kim, Chermack, & Yang, 2008).

The historical evolution of the idea of LO can be said to have scattered over four stages. Figure 2.2 presents the researcher’s viewpoint of the main historical events that helped build the LO idea we know currently.

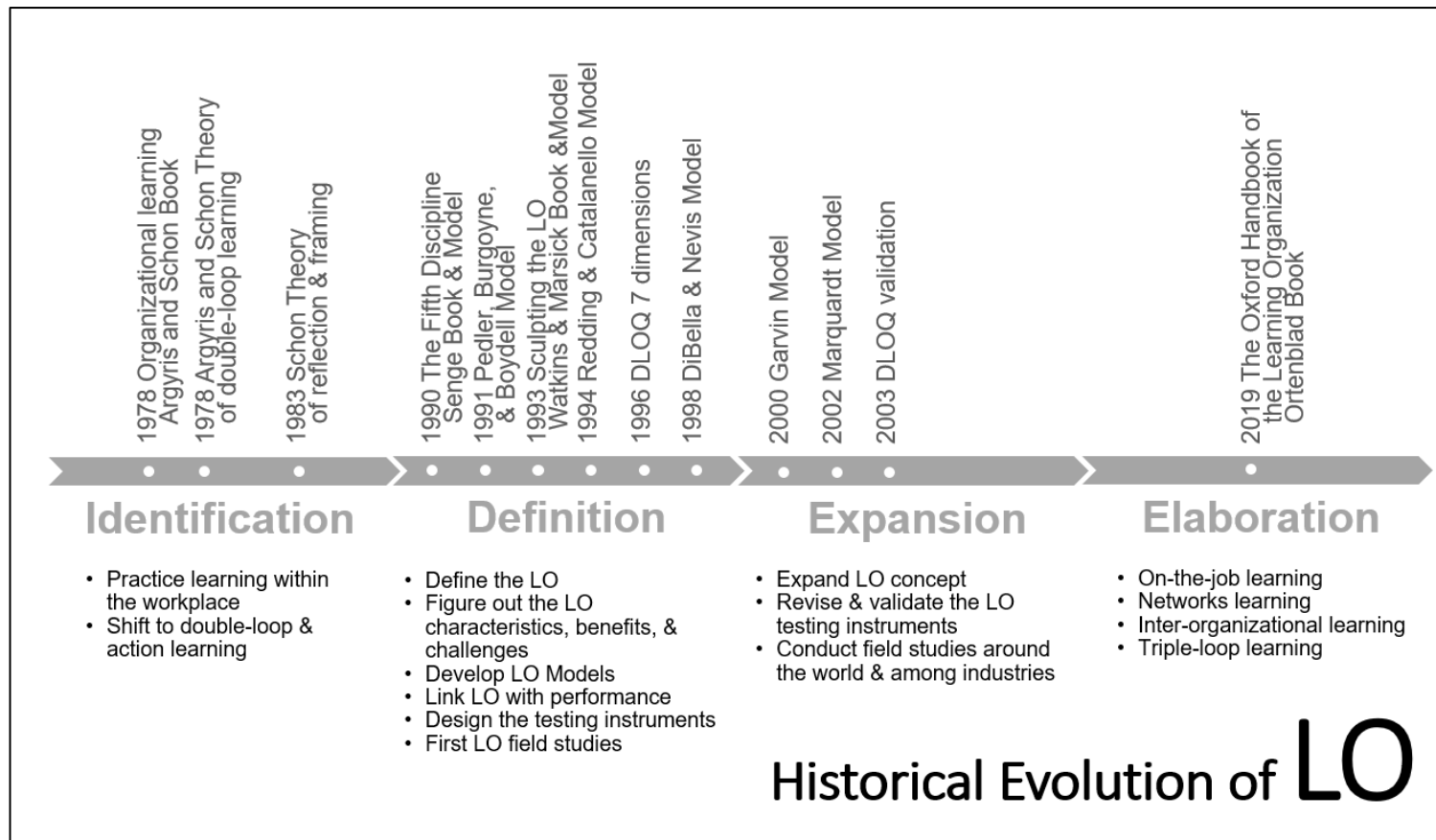


Figure 2. 2  
Historical Evolution of Learning Organization

### **2.3.5.1 Identification Phase**

The story started like a snowball, beginning with short terms of learning, and expanding over time to be a large holistic concept, which is LO. According to Chajnecki (2007), earlier forms of learning within the workplace were in the first place developed between 1950 and 1990, and they were understood to be training programs. The purpose of these programs was to increase productivity and efficiency (Chajnecki, 2007).

In the early 1980s, work teams were created. Organizational leaders started charging employees with doing “more” tasks and responsibilities with “less” managerial guidance and resources. This required group members to interact and depend on one another to achieve a shared goal (Chajnecki, 2007).

Organizational learning was associated with the term “double-loop learning,” which was defined by Argyris and Schon (1978). This term moved the focus from adaptive “single-loop learning”, where the error is corrected in a standard way to produce the expected outcome, to strategic learning (Asian Development Bank, 2009) or “double-loop learning”, where the errors are corrected by modifying the whole organization’s objectives, policies, and perspectives. In addition to double-loop learning, action learning emerged as a key element associated with organizational learning. Action learning includes the following components: knowledge dissemination, a focus on problems, and a learning culture (Chajnecki, 2007). Action learning is linked closely to Michael Marquardt, the developer of the Marquardt (2002) LO model.

During this period, various approaches and tools emerged to support individual and group learning and learning environments. According to Griego, Geroy, and Wright (2000), from the 1980s to the 1990s, there was

636% growth in publications on LO, indicating the growth of interest in the topic (Griego, Geroy, & Wright, 2000).

### **2.3.5.2 Definition Phase**

In the 1990s, researchers were confident enough to provide concrete definitions of LO, starting with Senge (1990), and followed by Pedler et al. (1991), Watkins & Marsick (1993), and others. In these 10 years, Senge (1990), as well as other authors, have studied LO and the characteristics required for organizations to achieve success levels in the LO (Griego, Geroy, & Wright, 2000; Watkins & Kim, 2018). The authors started studying the proposed benefits and challenges of being a LO. More than six LO models have been designed to presents the different perspectives of the phenomena, including Watkins & Marsick's dimensions of LO (1993), the most famous and practical model.

During this period, the research on LO has grown, and the link between LO and organizational performance has nearly been proven. The expansion has included toolkits that can move the abstract "idyllic" LO model to practical steps (Ortenblad, 2019). The researchers published their efforts to design diagnostic and testing instruments applied in different sectors and organizational levels, such as the DLOQ, in 1993.

In addition to scholars, the business community was also tempted to the LO world. Companies absorb the call to be LOs, and many case studies about famous companies were published. Companies such as Honda and General Electric reached performance improvement or other tangible gains (Garvin, 1993). However, the mid-1990s was well known as the peak of interest in LOs (Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004).

### **2.3.5.3 Expansion Phase**

In the 2000s, definitions of LO and models for creating a LO have “flourished” (Santa, 2015). Marquardt (1996-2002) has expanded the LO concept by referring to knowledge management and action learning (Griego, Geroy, & Wright, 2000; Perfetti, 2016).

Most of the LO instruments and tools have been validated and revised, including the DLOQ in 2003 (Kim, Egan, & Tolson, 2015). In addition, new tools, such as the Moilanen Learning Organization Diamond, have been developed (Moilanen, 2001).

After the maturation of the LO idea, many researchers conducted field studies. They offered solid conclusions based on work around the world and among industries (Watkins & Dirani, 2013), some of which are presented in the next section. According to Watkins and Kim (2018), The main current research area in LO is dimensionalizing organizational performance, the influence of national culture, and informal learning in creating a learning culture (Watkins & Kim, 2018).

During this period, some researchers thought that LO was out of date and must have been replaced by knowledge management theories (Nyhan, Cressey, Tomassini, Kelleher, & Poell, 2004). Still, LO has the generalizable property of the “good” theory (Santa, 2015).

### **2.3.5.4 Future LO Elaboration Phase:**

Despite some authors’ criticism about LO, they still expect elaboration of the LO concept and dimensions. Haak (2018) listed the 18 HR trends and opportunities for LO. He indicated the need for personalized learning and on-the-job learning; the shift from individuals to team and network learning; and the shift from job positions with fixed assignments

to job roles with flexible assignments, speed, and fun learning (Haak, 2018).

In *The Oxford Handbook of the Learning Organization*, Ortenblad summarized the features and perspectives that required explicit elaboration in the original versions of LO, including care about the environment, multiple voices, triple-loop learning, unlearning, and inter-organizational learning (Ortenblad, 2019).

## **2.4 Learning Organization Cases**

LO is a global practice. The literature shows that it is applicable in different industries, countries, and managerial positions, whether as a goal or a factor of performance or a mediator between other variables (Santa, 2015).

On industry or sector-wise, industries' emphasis on LO differs according to their internal culture, external environments, and government regulations (Chajnacki, 2007). However, LO studies are performed in different regions all over the world. According to Watkins and Dirani (2013), analyzing a subset of data accumulated over the years not only validated the LO idea and instruments, but also revealed the few differences across cultures (Watkins & Dirani, 2013).

Figure 2.3 shows the companies subjected to case studies on LO. Example of companies that undertook LO tests included Honda, Corning, General Electric, General Motors (Garvin, 1993), Ford Motor Company (Chajnacki, 2007), Asian Development Bank (Asian Development Bank, 2009), Orange Jordan (Qawasmeh & Al-Omari, 2013), Marks and Spencer (Wilson & Beard, 2014), King Saud University (Elshafie, 2018), Goldman Sachs, Microsoft, and Nigerian Breweries (Odor & Samuel, 2018). However, few can be classified as fitting the description of an LO (Odor & Samuel, 2018). The following subsections give more insight into sample cases of LO studies worldwide and in different industries.



Figure 2. 3  
Case Studies on LO

### 2.4.1 Learning Organization in the Banking Sector

Mbuthia (2018) investigated the effects of LO dimensions on the organizational performance of commercial banks in Ongata Rongai. The respondents were management- and operational-level staff from 11 banks.

The regression analysis revealed a positive relationship between organizational performance and three dimensions: continuous learning, inquiry and dialogue, and employee empowerment. Team learning was

removed from the regression model because there was no correlation between team learning and organizational performance, which contradicted the majority's beliefs about LO. Accordingly, the author recommended investing resources to support learning, encourage spontaneous and enthusiastic dialogues between members, adopt flat organizational structures, and embrace a culture that allows employees to make decisions according to their job levels (Mbuthia, 2018).

Thakur et al. (2015) studied the relationship among the dimensions of LO and the relationship between organizational tenure and dimensions of LO in Indian banks. A total of 368 responses were collected from bank employee with multiple organizational tenures (experience years). The researchers attempted to create a new questionnaire by combining multiple LO models, including Watkins and Marsick (1998), Pedler et al. (1991), Garvin (1993, 2000), and Gardiner and Whiting (1997) as well, resulting in the testing of nine dimensions. The researchers tested the reliability scores for dimensions, the correlation between the dimensions, and one-way ANOVA to determine the relationship between the organizational tenure of the employee and the dimensions of LO. They concluded that the nine dimensions of the LO were positively correlated, indicating that as an employee stays longer with the bank, his perception of learning culture and policies changes (Thakur & Chaudhuri, 2015).

Lang (2013) applied Watkins and Marsick's model and Bass's theory to investigate whether managers' leadership style in a bank significantly impacts LO's dimensions. The study was carried out in Canadia Bank Plc—a famous financial institute in Cambodia—and the data were collected from 168 bank staff in the head office. Lang used the DLOQ and Multi-Leadership Questionnaire (MLQ). The study revealed that transactional leadership had more influence in nurturing LO than transformational

leadership. Accordingly, he suggested that LOs must focus on transactional leadership skill training (Lang, 2013).

### **2.4.2 Learning Organization in the Telecommunications Sector**

In the Arab context, Qawasmeh et al. (2013) implemented a study on Jordan Telecom (Orange), a leading company in Jordan's telecom sector, in an attempt to assess the credibility of the DLOQ in the Arab business environment and measure the impact of LO's seven key dimensions on organizational performance. A total of 312 employees participated in the case study, which concluded that the DLOQ proved to be suitable in the Arab business context, and the LO dimensions positively correlated with organizational performance. The researchers recommended paying attention to the seven LO dimensions because of their importance in enhancing organizational performance and achieving competitive advantage (Qawasmeh & Al-Omari, 2013).

In Spain, Cegarra-Navarro and Wensley (2009) studied the impact of congenital learning on small and medium-sized enterprises' (SMEs) business performance in the telecommunications industry. They considered the organizational learning process (congenital learning process) as an important success factor for SMEs. They empirically tested the collected data using structural equation modeling (SEM). 130 SMEs participated in the study. The results revealed that organizational performance was positively affected by the transfer and transformation of knowledge as long as the organization had implemented processes that created what they referred to as an "open organizational context" (Cegarra-Navarro & Wensley, 2009).

### **2.4.3 Learning Organization in the Manufacturing and Construction Sector**

Ambula et al. (2016) sought to assess the influence of LO on manufacturing firms' performance. The authors obtained responses from the top management of 108 large manufacturing firms in Kenya. They used the DLOQ as well as financial and non-financial measures of performance. The regression analysis revealed that LO had a significant influence on firm performance, whether in financial or non-financial terms. Moreover, the study proved that LO was a better predictor for non-financial performance (Ambula, Awino, & Obonyo, 2016).

In the construction sector, Raide'n et al. (2006) utilized LO and chaordic enterprise concepts to show a case study of the HRD strategy, policy, and practice of a large UK-based construction firm. For the purpose of achieving the study objectives, the author linked HRD with Senge's (1990) LO model and Nyhan et al.'s (2004) organizational learning model. The data were collected through 50 semi-structured interviews with divisional directors, human resource personnel, senior operational managers, and professional employees. They concluded that management development activities ensured a continuous improvement culture that was profitable in terms of its performance (Raide'n & Dainty, 2006).

### **2.4.4 Learning Organization in the Education Sector**

Aslan (2019) tested the relationship between Turkish secondary school students' academic achievement and LO in secondary school. Here, the performance indicator was the student graduation and transition to higher education. The author used the Realization Level of Learning Organization Disciplines' at Organizations Scale and Senge's five disciplines as data collection tools. The study covered 21 secondary

schools (state and private) and 565 respondents. The simple linear regression analysis demonstrated that schools' LO performance predicts students' scores, so to increase the academic success, it is required to move toward being LO (Aslan, 2019).

In Universities, Abenga and Sarange (2018) examined whether the LO idea was applicable to Kenya's universities. The authors argued that LO appears to be more practical in entrepreneurial organizations than in educational entities. The theoretical review paper was based on Ortenblad and Koris' (2014) typology of LO. The authors concluded that the LO idea was relevant to the universities in Kenya, but needed to be applied with understanding of universities' unique nature and include the university students' perspectives, as they were critical consumer of these entities (Abenga & Sarange, 2018).

In a quantitative study, Elshafie (2018) explored important LO issues in the college of business administration at King Saud University (KSU) in Saudi Arabia. The author used a case study triangulation method to collect data, including documents, interviews, and a survey. The DLOQ was distributed to 100 faculty members and the management, followed by 20 semi-structured interviews with the directorate. Elshafie (2018) found that five out of seven dimensions of the DLOQ strongly supported and led KSU to be a LO university. In her study, "dialogue and inquiry" and "team learning and collaboration" were unpinned in the business administration college at KSU. Hence, these dimensions negatively affected the learning university (Elshafie, 2018).

#### **2.4.5 Learning Organization in Other Service Sectors**

In a low-resource hospital in Kathmandu, Nepal, Leufvén et al. (2015) focused on capturing a snapshot of this hospital's characteristics and

gaining insights into knowledge and learning-related dimensions, strengths, and weaknesses. A total of 135 responses were collected from nursing students, nurses, medical interns, doctors, pediatricians, gynecologists, and obstetricians. The 21-item DLOQ was used because it has preferable psychometric properties, ease of use, and reduced follow-up. The authors concluded that the DLOQ could be applied in hospital settings in low-income countries the same way it could in high-income countries (Leufvén, Vitrakoti, Bergström, KC, & Målvist, 2015).

In the advertisement sector in Greece, Dekoulou et al. (2015) explored the LO pattern in association with two primary work outcomes: job satisfaction and individual performance. They argued that the interaction between LO, job satisfaction, and the individual performance had been investigated to a limited extent. The questionnaire was distributed among 251 employees who were working in 49 advertising agencies. The authors used Watkins and Marsick's seven dimensions model to measure the LO. The regression analysis revealed that the existence of a LO is a crucial predictor of both employee job satisfaction and individual performance. Job satisfaction acts as a mediator of the relationship between LO and individual performance (Dekoulou & Trivellas, 2015).

In consulting industry, Ranta et al. (2014) analyzed the impact of LO on organizational performance. In a descriptive research paper, the researchers used surveys to collect data. The participants in the study were 50 employees working in managerial positions of leading consulting firms. The Udai Pareek (2nd edition) structured questionnaire was used for measuring LO with six parameters: holistic frame, strategic thrust, shared vision, empowerment, information flow, internality, learning, and synergy. In addition, a self-formulated questionnaire was used for organization performance. It had five parameters: financial, supply, employee,

commitment, and customer. The analysis revealed that organizational performance in consulting firms is affected by LO, but to a minimal extent. Hence, the authors suggested extending the study further to include greater numbers of participants from consultancy firms (Ratna, Khanna, Jogishwar, Khattar, & Agarwal, 2014).

In an empirical study that mainly focused on Jordan's insurance sector, Al-Qutop et al. (2011) measured the extent to which Jordanian insurance firms are considered LOs, and assessed learning facilitators' role in building LOs. The authors depended on Senge's (1990) five disciplines model to measure LO. They examined five learning facilitators: learning culture, organizational structure, management information system (MIS), HRM, and leadership. A total of 230 employees participated, representing 7 out of 28 insurance companies. The study findings were as follows: First, Jordan's insurance sector is moving towards transferring into a LO. Second, there is a strong positive relationship between the five LO disciplines and the learning facilitators (Al-Qutop, Futa, & Ma'ani, 2011).

## **2.5 Learning Organization and Performance**

### **2.5.1 Overview of Performance**

Understanding organizational performance is essential to recognizing its relationship with LO dimensions. Performance is defined as "behavior that accomplishes results" (Armstrong & Taylor, 2014, p. 331). Individual job performance is "things that people actually do, actions they take, that contribute to the organization's goals" (Campbell & Wiernik, 2015, p. 48), while organizational performance refers to the general performance of an organization.

The organizational performance definition has evolved over time, but has kept the same elements in the 21<sup>st</sup> century, namely "effectiveness,"

“efficiency,” and “relevancy” (Jenatabadi, 2015). Effectiveness is the “achievement of goals”, efficiency is the “ratio of output to the input required to achieve it” (Robbins & Judge, 2013, p. 59), while relevancy is “satisfaction of the stakeholders” (Jenatabadi, 2015, p. 4). These elements altogether are covered in “the capability and ability of an organization to efficiently utilize the available resources to achieve accomplishments consistent with the set objectives of the company, as well as considering their relevance to its users” (Jenatabadi, 2015, p. 4).

There are two aspects of performance, making it a multi-dimensional concept. The performance consists of the behavioral aspect (process) and the outcome aspects (result) (Armstrong & Taylor, 2014). The behavioral aspect refers to "what people do at work", while the outcome aspect refers to the "results of the individual's behavior" (Sonnentag, Volmer, & Spychala, 2008). Several studies differentiated between the behavioral and outcomes aspects of performance (Sonnentag, Volmer, & Spychala, 2008; Campbell & Wiernik, 2015). Accordingly, the importance of job performance extended to include both dimensions of the performance (Armstrong & Taylor, 2014).

Measurement of performance is an essential indicator of a firm's effectiveness (Ambula, Awino, & Obonyo, 2016) including in the public sector (French & Goodman, 2012). Historically, many measures have been used to measure performance, including: profit, return on investment (ROI), return on assets (ROA), return on equity (ROE), revenue growth, and sales turnover, which are financial measures (Ambula, Awino, & Obonyo, 2016; Diaz-Fernandez, Pasamar-Reyes, & Valle-Cabrera, 2017). Performance can also be measured by increased revenue from improved products and services, improved customer satisfaction, improved quality, and a more appealing workplace (Ranta, 2018). In a more balanced way,

performance can be measured using the balanced scorecard (BSC) (Ambula, Awino, & Obonyo, 2016), combining multiple indicators. However, organizational performance must encompass individual performance, team member performance, and management performance (Campbell & Wiernik, 2015).

### **2.5.2 The Relationship between LO and Performance**

The literature shows a lot of theories about the LO. Moreover, many studies discussed LO and knowledge management. Since Senge (1990) said that having LO disciplines in the organization increases performance (Senge, 1990), the studies provided growing evidence of a relationship between performance and the LO. Some researchers have followed the most famous LO framework, which is Watkins and Marsick's (1993), hence they have studied similar variables, and others have not, thus they have studied quite different variables.

The researcher will discuss the relevant studies in chronological order to highlight the relationship between variables and their evolution over time, focusing on the most famous LO framework—Watkins and Marsick's (1993)—and its famous measurement instrument.

In an attempt to determine practical approaches to developing a LO, Griego et al. (2000) defined two predictors of LO only, including rewards and recognition and training and education. By using the multiple linear regression analysis techniques, they concluded that providing rewards and recognition in addition to training and education would develop a LO that led to organizational achievements (Griego, Geroy, & Wright, 2000).

Chajnacki (2007) examined the relationship between LO characteristics and multi-dimensional organizational performance, which includes operational, knowledge, financial, and organizational aspects. A

multiple regression equation was used to examine the relationship between the LO dimensions and the multi-dimensional performance. The best-fit regression model for multi-dimensional organization performance indicated that the learning dimensions of community connections and embedded learning systems were the most important contributors to the model (Chajnacki, 2007).

Hussein et al.'s (2014) study presented the potential links between LO, organizational performance, and organizational innovativeness in the context of public institutions of higher education in Malaysia. The researchers proposed that LO culture directly affected organizational performance and organizational innovativeness, leading to long-term organizational success (Hussein, Mohamad, Noordin, & Ishak, 2014). A similar study was published in 2016 with more detailed results. The correlation analysis indicated that all LO culture dimensions were significantly associated with organizational performance and organizational innovativeness. Moreover, continuous learning was highly related to organizational performance, followed by team learning (Hussein, Omar, Noordin, & Ishak, 2016).

Sinclair (2016), in her doctoral thesis, attempted to explore the primary healthcare general practice microsystems in New South Wales from the perspective of LO. She sought to demonstrate the synergies between high performance and the LO abilities of the clinical microsystems. She used the DLOQ, in addition to other tools to collect data from clinical and administrative staff, as well as patients. In the case under study, the results were consistent with the literature. The two dimensions that scored highly were the continuous learning opportunities and the strategic leadership, and the lowest was creating systems to capture and share learning. The results indicated that while New South Wales general

practice microsystems are LOs, there is a high proportion of informal learning (Sinclair, 2016).

Mbuthia (2018) investigated the effects of some LO dimensions on commercial banks' organizational performance in Kenya. The researcher addressed four LO dimensions only: continuous learning, inquiry and dialogue, team learning, and employee empowerment. It concluded that three LO dimensions: continuous learning, inquiry and dialogue, and employee empowerment, were statistically significant in predicting organizational performance. Hence, team learning had no significant effect on organizational performance, contradicting other studies' results (Mbuthia, 2018).

Some researchers have concluded that the relationship between the LO and performance is indirect. Alipour et al. (2011) theoretically investigated the role of LO dimensions in intrapreneurship and organizational performance. The researchers agreed on the relationship between LO dimensions and performance. They concluded that intrapreneurship could mediate the relationship between LO and organizational performance, making intrapreneurship a competitive factor (Alipour, Idris, Ismail, Uli, & Karimi, 2011).

## **2.6 Research Framework**

To ensure clarity, the research framework of the current study is explained in five consecutive sections, starting with the deficiencies or the literature gaps, and followed by the leading model that has been selected for this study. Then the additional variable has been tested beside the leading model, the conceptual model, which includes all the variables intended to be tested in the study. Finally, the research hypotheses are presented.

### **2.6.1 Deficiencies in the Literature (Gaps)**

There are many studies that discuss the concept of LO and knowledge management. They recommend some characteristics, drivers, and processes that support building and developing a LO. Yet, there is a need for empirical studies (Ambula, Awino, & Obonyo, 2016) in different industries and working cultures.

Learning is the key to survival and a renewal mechanism (Hussein, Omar, Noordin, & Ishak, 2016; Diaz-Fernandez, Pasamar-Reyes, & Valle-Cabrera, 2017), and there are many success stories regarding the implementation of LO in private sectors all over the world. However, despite the increased emphasis on performance in the public sector and the willingness to provide better citizen services, only a few public sector organizations seek to become LOs.

While a LO makes a wide variety of contributions to the organization itself and the community in general, there is a lack of studies that mention governmental organizations and the public sector as a functional area in which to practice a LO. Moreover, few published research studies applied in Bahrain or the GCC Region. Hence, there is a need to examine the LO model's application in the public sector and its impact on performance.

Therefore, this study's primary purpose is to explore the applicability of implementing a governmental LO. And its secondary purpose to identify the relationship between LO and the organization performance through a conceptual model based on the latest Watkins and Marsick model, with some amendments that suit the scope and the assumptions of this study.

## 2.6.2 Watkins and Marsick Model as a Leading Model

As stated before, the most famous LO model is Watkins and Marsick's model, which was introduced in Karen Watkins and Victoria Marsick's book *Sculpting the Learning Organization* in 1993. This model consists of seven action imperatives: create continuous learning opportunities, promote inquiry and dialogue, encourage collaboration and team learning, establish systems to capture and share learning, empower people toward a collective vision, connect the organization to its community and environment, and last but not least, provide strategic leadership for learning, which was added later in 1996 (Chajnacki, 2007; Kim, Egan, & Tolson, 2015).

This model is supported with DLOQ, the best-known instrument for measuring LO (Kim, Egan, & Tolson, 2015). The DLOQ is a Likert-type instrument that measures the seven LO dimensions or variables using either 43 items or 21 items. It is incredibly consistent with the model, prompting a vital recommendation by (Daryani, Ardabili, & Amini, 2014) to link the real practice captured by the instrument with the theoretical model component. The DLOQ is one of the few validated tools in the literature (Moilanen, 2001). It has a degree of clarity in identifying responses and scoring items (Sinclair, 2016), in addition to the availability of a guiding manual (Watkins & O'Neil, 2013). The 21-item version is considered most appropriate, because of its preferable psychometric properties, alongside its ease of completion by respondents, thus resulting in a higher response rate and fewer follow-ups (Leufvén, Vitrakoti, Bergström, KC, & Målqvist, 2015).

### **2.6.3 Additional variable to test**

In addition to Watkins and Marsick's (1993) LO framework, an additional variable has been added to reflect the current modern organizational reality, which requires information technology in all administrative activities and the organization's technical processes. The additional variable is digitalization strategy. This is in line with most of the other studies within this field, which have created hybrid models of the LO based on elements of multiple models (Chajnacki, 2007; Sinclair, 2016). It is also in line with the calls for placing advanced technologies at the center of the systems and processes in the LO (Al-Qutop, Futa, & Ma'ani, 2011; Santa, 2015).

Technology has been explicitly counted as a subsystem in Marquardt's (2002) model, under the Technology Support for Learning subsystem. He believes most LO advocates rely heavily on organizational development initiatives (Lyle, 2012; Qehaja, Kutllovci, & Havolli, 2017). Recently, Marsick (2013) indicated that technology has fundamentally altered work and learning cultures, hence enhancing the performance of LOs over decades (Marsick, 2013). This means that technology improvements can be implicitly counted as a factor in the LO.

Digitized information is easier to store, access and transmit, supporting the use of new technologies in an organization's overall activities. Digitalization can impact the organization's entire environment, including internal functions and the external competitiveness (Parviainen, Kääriäinen, Tihinen, & Teppola, 2017; Kuusisto, 2017). Gbadegeshin (2019) studied the effect of digitalization on the commercialization process. He concluded that digitalization would shorten the duration of the process; change the business models of the life sciences industry; soften government regulations; influence commercialization activities; and

finally, influence workload, official activities, activity routinization, and government procedures (Gbadegeshin, 2019).

After a wide-ranging study of digitalization's organizational effects, Kuusisto (2017) listed five main effects: organizational agility, organizational structures, business ecosystems, digital innovations, and organizational learning. The author emphasized digitalization's effects on internal learning, since it enables codification and improves knowledge analysis by using quality management tools, business intelligence (BI), or communication technologies. Digitalization also enhances absorptive capacity or, in other words, external learning, whether by search engines, retrieval techniques, or query systems (Kuusisto, 2017).

Wroblewski (2018) summarized the key areas that transform as a result of digitalization. The first is the business model, which includes digital products and services. The second is operational processes, including using analytics tools, knowledge sharing, real-time performance management, and internal processes. The last key area is customer experience, including launching social media campaigns, building an online community for customers to share their knowledge, and providing customized product services based on customer analytics (Wroblewski, 2018).

Ranerup et al. (2016) analyzed the business models in public service platforms (PSP), where they identified the “traditional view” and the “emerging view” of public agencies in Sweden. The investigated cases revealed the underlying logic of digital platforms (PSPs) in the new public management. The authors encouraged public e-services and transformative government (Ranerup, Henriksen, & Hedman, 2016).

The literature reveals the positive impact of digitalization on organizational performance (Agboola, et al., 2019; Wroblewski, 2018). This includes the banking sector (Agboola, et al., 2019), manufacturing (Schumacher, Sihni, & Erol, 2016), high-technology life science industry (Gbadegeshin, 2019), and public sector (Wroblewski, 2018).

Digitalization's impact on performance is usually ignored, possibly because digital and technology transformations will not be visible in the short run (Kuusisto, 2017; Wroblewski, 2018). However, in Bahrain, the success of government transformation in IT is attributable to multiple factors. According to Mahmood et al. (2019), one of them is the relative maturity of digital government initiatives (Mahmood, Weerakkody, & Chen, 2019).

Learning and using technologies prompts debates about becoming a LO (Altinay, Dagli, & Altinay, 2016). This not surprising, since it may be the most significant change that developed the LO (Lyle, 2012). Moreover, the lack of appropriate technology is considered a challenge facing the public sector during efforts to manage knowledge (Dewah & Mutula, 2016). So, the organization that does not use information technology can hardly cope and adapt to the environment.

Table 2.4 summarizes the reason behind testing digitalization as an additional variable or dimension of the LO, as indicated in the above-mentioned literature. It is clear from the table that most of the researchers have referred to digitalization's effects on the organization (internally), its role in transforming the organization, and its positive impact on performance.

Table 2. 4

Justifications of testing digitalization as an additional variable

| Reason                                                                          | Ranerup et al.<br>(2016) | Parviainen et<br>al. (2017) | Kuusisto<br>(2017) | Wroblewski<br>(2018) | Gbadegesin<br>(2019) | Agboola et al.<br>(2019) | Mahmood et<br>al. (2019) |
|---------------------------------------------------------------------------------|--------------------------|-----------------------------|--------------------|----------------------|----------------------|--------------------------|--------------------------|
| The effect of digitalization on the organization internally.                    | ✓                        | ✓                           | ✓                  |                      | ✓                    | ✓                        |                          |
| The effect of digitalization on the external environment (business ecosystems). |                          | ✓                           | ✓                  |                      | ✓                    |                          |                          |
| The impact on the learning process.                                             |                          |                             | ✓                  |                      |                      |                          | ✓                        |
| The role in transforming the organization.                                      | ✓                        |                             |                    | ✓                    | ✓                    | ✓                        | ✓                        |
| The positive impact on the public sector.                                       | ✓                        |                             |                    | ✓                    |                      |                          | ✓                        |
| The positive impact on performance.                                             | ✓                        |                             |                    | ✓                    | ✓                    | ✓                        | ✓                        |

### 2.6.4 Conceptual Model

This section lists the study's dependent and independent variables, and concludes with the conceptual study model in Figure 2.4.

#### Dependent Variable:

DEP VAR (Y): Organizational Performance (OP)

Performance is defined as the "behavior that accomplishes results" (Armstrong & Taylor, 2014, p. 331) or the end result of activities or the actual outcome of a strategic management process (Wheelen & Hunger, 2010).

#### Independent Variables (Xs):

According to Watkins and Marsick's (1993) LO framework, there are seven dimensions used to measure the LO. Each dimension can be an independent variable (Kim, Egan, & Tolson, 2015; Mbuthia, 2018):

INDEP VAR 1: Continuous Learning (CL)

This variable is used to measure creating continuous learning opportunities in the organization. It is the ability to continually develop and

improve one's skills and knowledge to perform effectively and adapt to workplace changes. It is the opportunity to foster continuous learning through more effective planning for informal learning, learning how to learn, and just-in-time learning. Constant learning is opportunistic, and it is supported by experiments in teaching managers to be facilitators and coaches.

#### INDEP VAR 2: Inquiry and Dialogue (ID)

This variable is used to measure promoting inquiry and dialogue. Inquiry and dialogue is an argument or discussion that allows two agents to share knowledge. Inquiry involves questioning that simultaneously challenges assumptions but does not attack the individual. Effective dialogue calls for open minds and open communication.

#### INDEP VAR 3: Team Learning (TL)

This variable is used to measure encouraging collaboration and team learning. Team learning is the process of working collectively to achieve a common objective in a group. Through teams, people learn how to work collaboratively, extending the organization's capacity to perform a unified action on common goals. Team learning occurs when the team members understand the skills of framing, reframing, experimenting, crossing boundaries, and creating an integrative perspective.

#### INDEP VAR 4: Embedded Systems (ES)

This variable is used to measure ways to establish systems to capture and share learning. It means building organizational capacity for new thinking that is then embedded and shared with others. It means finding ways to preserve what is learned to endure even with a highly mobile, temporary workforce.

#### INDEP VAR 5: Empowerment (EM)

This variable is used to measure empowering people toward a collective vision. It is the process of increasing people's right and will to decide. Everyone in the organization must have an idea of what the whole picture looks like, know how to get something done, have a budget with which to act, and learn how to influence others. Everyone must have access to information about how to plan to learn. Empowerment can be summarized in strategic views, plans, knowledge, skills, and resources.

#### INDEP VAR 6: System Connectivity (SC)

This variable is used to measure an organization's connection to its community and environment. It refers to interdependencies between the organization and its internal and external environment, acknowledged and worked through. Being connected to the internal environment is being responsive to members of the organization and their work-life needs. External customers in the broadest sense include the earth, our society, and the communities in which the organization is located.

#### INDEP VAR 7: Strategic Leadership (SL)

This variable is used to measure providing strategic leadership for learning. The leader model can support learning. Leadership uses learning strategically to achieve business results.

#### INDEP VAR 8: Digitalization Strategy (DS)

Digitalization strategy is the additional variable the researcher proposes. This variable used to measure the "social implications of increased computer-assistance, new media and communication platforms for the economy, society and culture" (Schumacher, Sihn, & Erol, 2016, p. 3) or "adoption or increase in the use of digital or computer technology by

an organization, industry, country, etc.” (Parviainen, Kääriäinen, Tihinen, & Teppola, 2017, p. 64).

Based on the proposed variables, the researcher assembled the following model, presented in Figure 2.4.

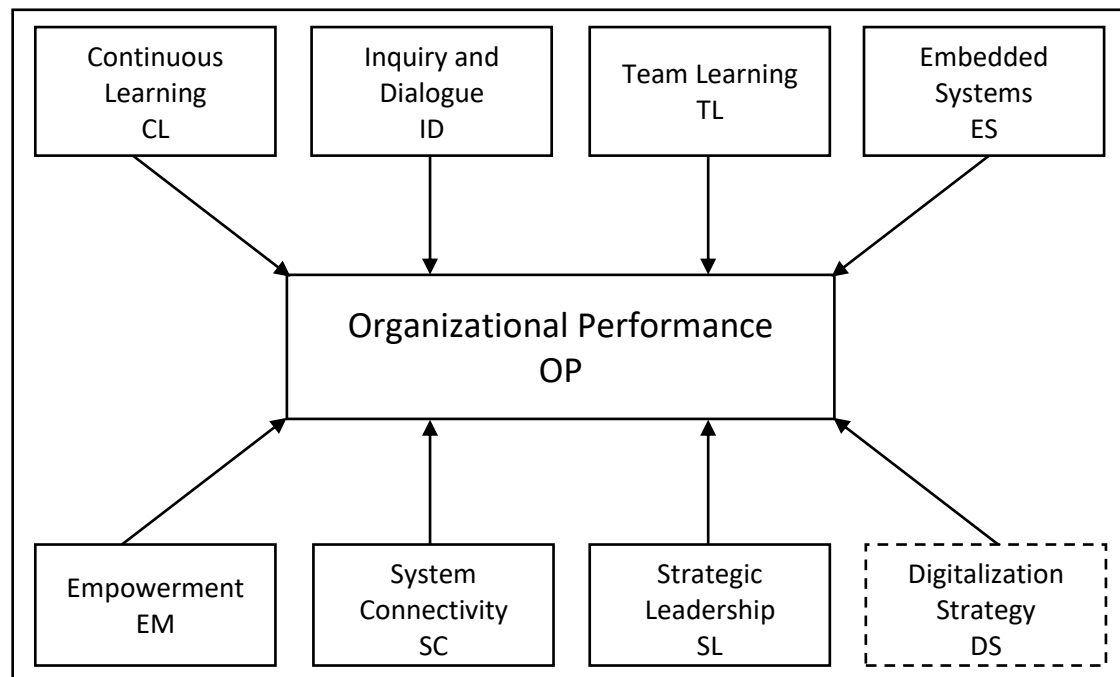


Figure 2. 4

The Research Conceptual Model

## 2.6.5 Research Hypotheses

The hypotheses function as a guide for the study direction, identify the facts that are relevant and not relevant, suggest the study design, and organizes the conclusions that may result from the study. Therefore, each hypothesis must be testable, be the best among its rivals, and must achieve its purpose (Cooper & Schindler, 2014).

Since the relationship between the LO and organizational performance in the public sector is under-tested, as stated in the literature, nine research hypotheses have been formulated. Two hypotheses were

formulated for each concept: the null hypothesis, indicated by ( $H_0X$ ), and the alternative hypothesis, denoted by ( $H_aX$ ).

Hypothesis 1 - Overall Testing:

$H_{01}$ : There is no significant relationship between LO dimensions and OP

$H_{a1}$ : There is a significant relationship between LO dimensions and OP

Hypothesis 2 - Continuous Learning:

$H_{02}$ : There is no significant relationship between CL and OP

$H_{a2}$ : There is a significant relationship between CL and OP

Hypothesis 3 - Inquiry and Dialogue:

$H_{03}$ : There is no significant relationship between ID and OP

$H_{a3}$ : There is a significant relationship between ID and OP

Hypothesis 4 - Team Learning:

$H_{04}$ : There is no significant relationship between TL and OP

$H_{a4}$ : There is a significant relationship between TL and OP

Hypothesis 5 - Embedded Systems:

$H_{05}$ : There is no significant relationship between ES and OP

$H_{a5}$ : There is a significant relationship between ES and OP

Hypothesis 6 - Empowerment:

$H_{06}$ : There is no significant relationship between EM and OP

$H_{a6}$ : There is a significant relationship between EM and OP

Hypothesis 7 - System Connectivity:

$H_{07}$ : There is no significant relationship between SC and OP

$H_{a7}$ : There is a significant relationship between SC and OP

Hypothesis 8 - Strategic Leadership:

$H_{08}$ : There is no significant relationship between SL and OP

$H_{a8}$ : There is a significant relationship between SL and OP

Hypothesis 9 - Digitalization Strategy:

$H_0$ 9: There is no significant relationship between DS and OP

$H_a$ 9: There is a significant relationship between DS and OP

# CHAPTER THREE

## METHODOLOGY

## CHAPTER THREE

### METHODOLOGY

This research is exploratory in nature. Thus, to achieve the research objectives, a deductive research process was applied to collect the empirical data regarding the applicability of LO in the Bahraini public sector, and to test the relationship between the LO dimensions and organizational performance. It was constructed in light of the literature.

This chapter presents the methodology used in six distinct sections: research process; research method; research design and data collection plan; operationalization of concepts; sampling plan; and finally, the research validity, reliability, and protection of human rights section.

#### 3.1 Research Process

This study relies on deductive logic (or theory-testing). Deductive research aims to “test concepts and patterns known from theory using new empirical data” (Bhattacharjee, 2012, p. 3). Since there are multiple models for the LO, there is a need to discover whether the study model works in the Bahraini public sector or not, and which of the proposed eight dimensions have a significant relationship with performance.

Following deductive logic, this research was conducted in three stages until the completion of the report. Each stage consisted of several steps. This process was documented in detail, which in turn formed this report. Figure 3.1 shows the research process.

The research process started with the **exploration stage**. At this stage, the researcher went through the literature to obtain sufficient scientific background about the LO and the other authors who had published studies

in the same context. More than 80 published articles, theses, conference proceedings and books in this context were reviewed and read. Then the researcher formulated the research questions. The adequate literature review enabled the identification of the research variables that have been tested in the literature, and the variable that was imposed by the research framework and environment. The final dependent and independent variables under testing composed the research model. From the research model, the researcher constructed the hypotheses. This stage resulted in the research proposal and the research literature review chapter.

The second stage in the research process was the **design stage**. This stage was concerned with creating a blueprint of the steps that would lead to answering the research questions (Bhattacharjee, 2012; Cooper & Schindler, 2014) to make the research as efficient as possible, thus yielding the required information with minimum effort, time, and cost (Srinivas, 2016). At this stage, the researcher selected the research method, data collection method, operationalization of the study constructs, and the sampling plan - which would be review thoroughly in this chapter. This stage was documented in the methodology chapter.

The final stage was the **execution stage**. After preparing all the required blueprints, the researcher became ready to proceed with the research execution. This stage started with the pilot testing. Here, the researcher detected some problems in the research design; hence, it has been revised. The survey sample and instrument were modified to ensure the study's validity and reliability in the Bahraini public sector environment. Then the researcher proceeded with the collection of the empirical data. The data were analyzed and interpreted to draw conclusions. These results were critically discussed and linked to other studies' results. Accordingly, the researcher documented the analysis and

findings chapter, discussion chapter, research recommendations, and finally, the research report.

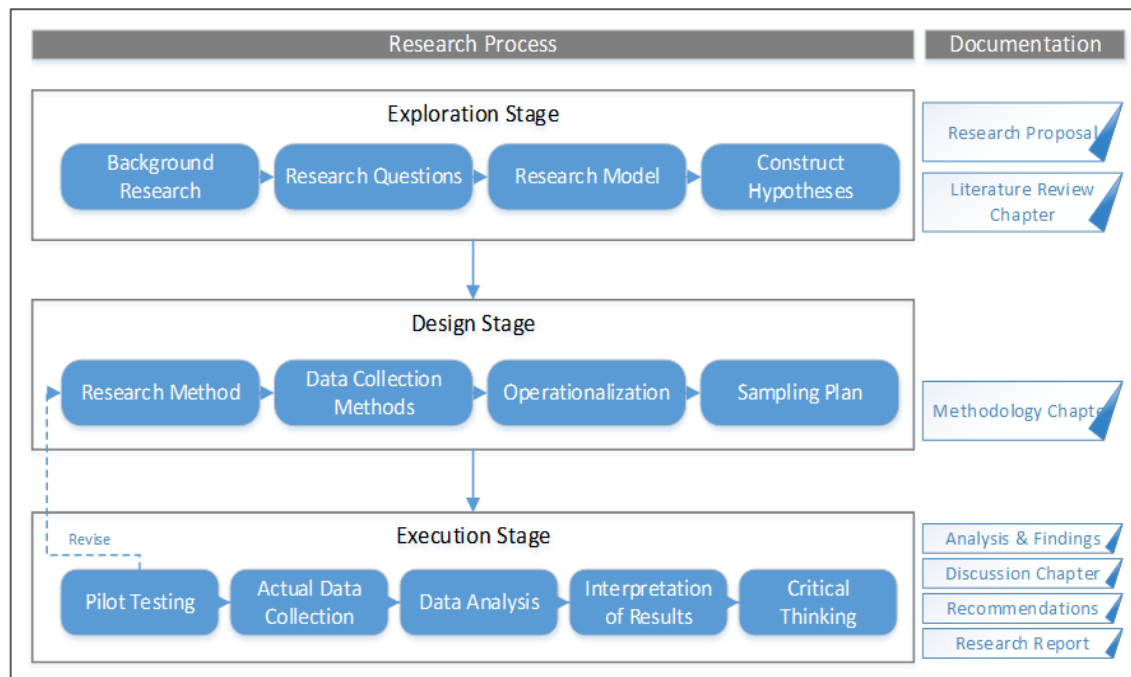


Figure 3. 1

Research Process

## 3.2 Research Method

### 3.2.1 Positivist and Interpretivist Approaches

There are multiple research approaches or paradigms available to be used by researchers. They fall broadly into two categories: positivist and interpretive.

Positivist or scientific (or quantitative, to some extent) research, which is “a scientific method of investigation” (Kivunja & Kuyini, 2017, p. 30), tends to use laboratory experiments, field experiments, and surveys as preferred research methods. Positivist research is based on theory (or hypotheses) testing through a deductive approach (Bhattacharjee, 2012). It relies on the collection of quantitative data to explore observations and answer questions. Through large amounts of empirical data, the researcher

can statistically detect underlying regularities, search for cause and effect relationships, and make predictions based on measurable outcomes. The main advantages of this approach are its repeatability, generalizability, and parsimony (low economic cost). Simultaneously, the positivist approach is incapable of providing explanations and detailed descriptions of the phenomena observed, and incapable of justifying the subject's viewpoint \_human\_ being observed (Bhattacharjee, 2012; Kivunja & Kuyini, 2017).

On the other hand, there is interpretivist or constructivist (or qualitative, to some extent) research. It refers to “gathering non-numerical data to help explain or develop a theory about a relationship” (Heffner, 2018). It tends to use case studies, action studies, and descriptive studies as preferred methods. Interpretivism research is aimed at theory-building (Bhattacharjee, 2012). The researcher dialogues, questions, listens, reads, writes, and records research data (Kivunja & Kuyini, 2017). This type of research may be used as a pilot study in order to gather data that may later lead to a quantitative study (Heffner, 2018). The key to interpretivist philosophy is studying the phenomena in their natural environment, which is considered an advantage of this approach. In addition, this approach, in general, provides some explanations and detailed interpretations of the phenomena (Bhattacharjee, 2012). However, the research conducted using this approach is usually not repeatable, and has low opportunities for generalizability. As well, since the researcher is considered part of the social phenomenon in some methods, such as action studies, researcher bias may affect the data derived from his research (Bhattacharjee, 2012).

### **3.2.2 This Research Approach**

There were intended to be two primary outcomes of this research. The first was an assessment of the applicability of LO in the public sector. The

second was a determination of the significance of the relationship between LO and the organization's performance in this sector.

The researcher chose the research approach after an extensive study of the advantages and disadvantages shown in Table 3.1. The positivist approach was selected because the reality about LO already exists, but research needs to capture it. This study was intended to give an idea of LO that can be generalized in Bahrain's public sector. It also aimed to identify the relationship between LO and the organization's performance, which can be analyzed quantitatively. The LO dimensions have an objective nature that can be measured and observed. Hence, the positivist approach provided the best framework to capture the reality in this research and share the findings with the interested key stakeholders.

Table 3. 1  
Advantages and Disadvantages of Positivist Research Approach

| <b>Advantages</b>                              | <b>Bhattacharjee<br/>(2012)</b> | <b>Srinivas<br/>(2016)</b> | <b>Kivunja<br/>&amp;Kuyini<br/>(2017)</b> |
|------------------------------------------------|---------------------------------|----------------------------|-------------------------------------------|
| Repeatability                                  | ✓                               | ✓                          | ✓                                         |
| Generalizability                               | ✓                               | -                          | ✓                                         |
| Parsimony (low economic cost)                  | -                               | ✓                          | ✓                                         |
| Limit bias by isolating the researcher role    | ✓                               | ✓                          | -                                         |
| <b>Disadvantages</b>                           | <b>Bhattacharjee<br/>(2012)</b> | <b>Srinivas<br/>(2016)</b> | <b>Kivunja<br/>&amp;Kuyini<br/>(2017)</b> |
| Incapable of providing explanations            | ✓                               | ✓                          | ✓                                         |
| Incapable of providing detailed interpretation | ✓                               | ✓                          | ✓                                         |
| Incapable of justifying the viewpoints         | -                               | -                          | ✓                                         |
| Reductionist and isolationist                  | -                               | -                          | ✓                                         |

### 3.3 Research Design and Data Collection Plan

The research design was formulated based on the research objectives, literature, and the research's theoretical framework. The following points formed a blueprint for fulfilling the research objectives. Figure 3.2 represents the mixed design implemented in the data collection.

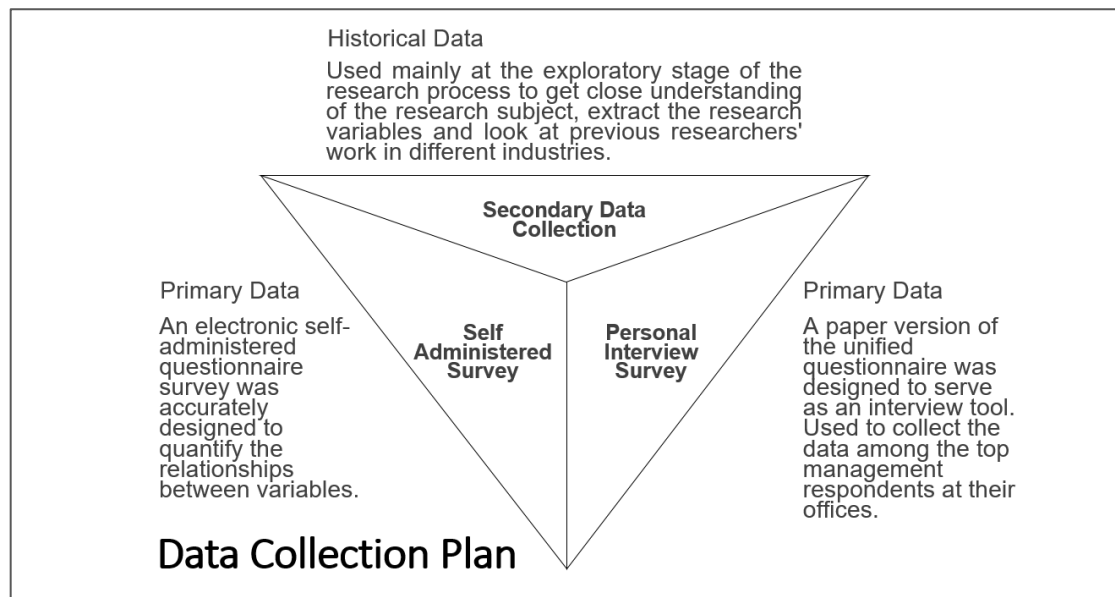


Figure 3. 2

Research Data Collection Plan

#### 3.3.1 Survey

In a cross-sectional survey, a group of respondents of different categories is observed and compared at one point in time, so independent and dependent variables “are measured at the same point in time” (Bhattacharjee, 2012). In this study case, that was in December 2020. The survey is a popular method to collect primary data, and the most functional in applied social research (MacDonald & Headlam, 2016). This approach's main benefit that it can be done relatively quickly (Bhattacharjee, 2012; Cooper & Schindler, 2014). In order to collect the primary data for this study, the researcher applied a unified questionnaire instrument to be used in two different communication and data collection methods in respect to

the targeted audience preferences: the self-administered survey and personal interview survey.

#### **a. Self-administered Survey**

An electronic self-administered questionnaire survey was accurately designed to quantify the significance of the relationship between variables. Google Forms was used as a survey design and collection tool (refer to Appendix B).

The “questionnaire is a research instrument consisting of a set of questions (items) intended to capture responses from respondents in a standardized manner” (Bhattacharjee, 2012, p. 74). It can collect easily understood and standardize information from many respondents \_who may be spread over a wide geographical area \_ at a relatively low cost, in a short time, and with perceived anonymity or privacy (Bhattacharjee, 2012; Cooper & Schindler, 2014; Srinivas, 2016).

On the other hand, the limited communication between the researcher and the respondents and the rigid questionnaire format prevents getting details and explanations for some facts and phenomenon (Cooper & Schindler, 2014; Srinivas, 2016). It requires monitoring responses and repeatedly sending reminders to non-respondents; otherwise, the researcher may get a low response (Bhattacharjee, 2012; Cooper & Schindler, 2014).

A detailed comparison of self-administered survey advantages and disadvantages is in Table 3.2. However, significant efforts were made to design the questionnaire in such a way as to benefit from its advantages and avoid its disadvantages. Google Forms, which was used for survey design and collection, could add value in monitoring, reporting, analyzing as a web-based questionnaire tool (Cooper & Schindler, 2014). The

electronic survey was used to collect data from the middle management respondents and the top management respondent that prefers electronic tools. Email reminders were sent to the participants to improve the response rate.

Table 3. 2  
Self-administered Survey Advantages and Disadvantages

| <b>Advantages</b>                                                              | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
|--------------------------------------------------------------------------------|---------------------------------|----------------------------------------------|----------------------------|
| Gather a large number of responses                                             | ✓                               | ✓                                            | ✓                          |
| Economical                                                                     | ✓                               | ✓                                            | ✓                          |
| Anonymity or privacy                                                           | ✓                               | ✓                                            | ✓                          |
| Remote collection of data                                                      | ✓                               | ✓                                            | ✓                          |
| Large sample allows detection of minor effects and allows comparative analysis | ✓                               | -                                            | -                          |
| <b>Disadvantages</b>                                                           | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
| Rigid format prevents getting details and explanations                         | ✓                               | ✓                                            | ✓                          |
| Limited communication between the respondent and the researcher                | -                               | ✓                                            | ✓                          |
| Reminders are required to maintain the response rate                           | ✓                               | ✓                                            | -                          |
| Subject to bias                                                                | ✓                               | -                                            | -                          |

## **b. Personal Interview Survey**

A paper version of the unified questionnaire was designed to serve as an interview instrument (refer to Appendix A). As a “two-way conversation between a trained interviewer and a participant” (Cooper & Schindler, 2014, p. 237), the interviewer can encourage responses and gather additional information verbally or through observation in the

personal face-to-face interview survey. Unlike a self-administered survey, the interviewer can clarify any issues raised by the respondent and ask follow-up questions, resulting in high-quality data (Bhattacharjee, 2012; Cooper & Schindler, 2014; Srinivas, 2016). This approach is suitable for intensive field surveys (Srinivas, 2016) since the researcher can control the responses and ensure a high response rate (Bhattacharjee, 2012; Srinivas, 2016).

On the other hand, interviews are time-consuming, resource-intensive, and require special interviewing skills (Bhattacharjee, 2012; Srinivas, 2016). There is also a chance of interviewer bias (Cooper & Schindler, 2014; Srinivas, 2016).

A detailed comparison of personal interview survey advantages and disadvantages is presented in Table 3.3. However, a well-planned interview and instrument were constructed to eliminate bias and improve the response rate. The personal interview survey has been used to collect the data among the top management respondents at their offices. To increase convenience, each participant could use the electronic questionnaire if they wanted to.

Table 3. 3  
Personal Interview Survey Advantages and Disadvantages

| <b>Advantages</b>                                                    | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
|----------------------------------------------------------------------|---------------------------------|----------------------------------------------|----------------------------|
| Two-way conversation between a trained interviewer and a participant | ✓                               | ✓                                            | ✓                          |
| High-quality data                                                    | ✓                               | ✓                                            | ✓                          |
| High response rate or controlled response                            | ✓                               | ✓                                            | ✓                          |
| Gather in-depth information verbally or through observation.         | ✓                               | ✓                                            | -                          |

| Avoid inconvenience and misinterpretation | -                               | -                                            | ✓                          |
|-------------------------------------------|---------------------------------|----------------------------------------------|----------------------------|
| <b>Disadvantages</b>                      | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
| Time-consuming                            | ✓                               | ✓                                            | ✓                          |
| Resource-intensive                        | ✓                               | ✓                                            | ✓                          |
| Requires special interviewing skills      | ✓                               | -                                            | ✓                          |
| Chance of interviewer bias                | -                               | ✓                                            | ✓                          |

### 3.3.2 Secondary Data Collection

Secondary data sources, or “studies made by others” (Cooper & Schindler, 2014, p. 130), have some considerable advantages. The researcher can find large representative samples in different formats. The obtained articles or reports are supported with documentation and explanations of methodology, sample strategy, data codes, etc., which allow the researcher to concentrate on data analysis and interpretation (Bhattacharjee, 2012). Historical data enables comparison across times or areas (MacDonald & Headlam, 2016), and allows for the identification of both solutions that could not receive attention and potential further research subjects (Cooper & Schindler, 2014). Nevertheless, there are some disadvantages, such as data compatibility, data coverage, and historical data problems, which may limit the data's usefulness (Bhattacharjee, 2012). The disadvantages come from the fact that the researcher does not have direct control over what is collected (MacDonald & Headlam, 2016).

A detailed comparison of the advantages and disadvantages of the secondary source is presented in Table 3.4. In this study, secondary data sources were used mainly in the exploratory stage of the research process, to understand the research subject, extract the research variables, and look at previous researchers' work in different industries. In addition to textbooks, Internet-based resources and electronic databases were used to

find the needed journal and magazine articles, as well as governmental reports.

To ensure exploiting the advantages of secondary data and avoiding its limitations, the researcher scanned as many credible articles as possible, and carefully studied their data quality in terms of the purpose, scope, format, and related audiences. Finally, the most reliable, valid, and recent articles were selected and used in this research.

Table 3. 4  
Secondary Sources Advantages and Disadvantages

| <b>Advantages</b>                                                    | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>MacDonald<br/>&amp; Headlam<br/>(2016)</b> |
|----------------------------------------------------------------------|---------------------------------|----------------------------------------------|-----------------------------------------------|
| Large representative samples in different formats                    | ✓                               | ✓                                            | ✓                                             |
| Articles or reports are supported with documentation and explanation | ✓                               | ✓                                            | -                                             |
| Enables comparison across times or areas                             | -                               | ✓                                            | ✓                                             |
| Identify solutions and potential further research subjects           | -                               | ✓                                            | -                                             |
| <b>Disadvantages</b>                                                 | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>MacDonald<br/>&amp; Headlam<br/>(2016)</b> |
| Data compatibility                                                   | ✓                               | ✓                                            | ✓                                             |
| Data coverage                                                        | ✓                               | ✓                                            | ✓                                             |
| Historical data problems                                             | ✓                               | ✓                                            | -                                             |
| Inability to control what was collected                              | -                               | ✓                                            | ✓                                             |

### 3.4 Operationalization of Concepts

To determine the applicability and the significance of the relationship between LO dimensions and performance, the researcher developed the conceptual model proposed in Figure 2.4. Accordingly, operationalization,

which is “the process of designing precise measures for abstract theoretical constructs” (Bhattacharjee, 2012, p. 22), was implemented to specify the items used to measure the research variables.

A questionnaire (Appendix A) was developed based on DLOQ 21 items—the preferred version for organizational study based on confirmatory factor analysis (CFA) results (Kim, Egan, & Tolson, 2015). The DLOQ format and scoring are standardized, so the questionnaire measures have been slightly modified to fit the present research's purposes and the working culture in the Bahraini public sector. Hence, the questionnaire has been written in both English and Arabic languages to suit the respondents' preferences.

Multiple measurement scales have been used. A nominal scale was used in section one to collect demographic details about the respondents, including their gender, educational level, and occupation category. Interval scales were used for work experience. The Likert-type scale of the six points of agreement (ordinal scale) was used in sections two and three to examine the participants' responses to each of the variables in the research model with endpoints of "strongly disagree" (1) and "strongly agree" (6).

The six-point Likert scale is used in the DLOQ to distribute the responses into two categories and “avoid clustering of responses at the mean”, in which the respondents are forced to select a choice toward one side of the scale (Watkins & O'Neil, 2013).

The DLOQ is a structured questionnaire consisting mainly of close-ended questions. But for this study, the researcher added one open-ended question to allow the respondents to write any notes and remarks that came to their minds.

### 3.4.1 Operationalization of Performance

Organizational performance is the dependent variable in this research, and it is one of the measured variables in the DLOQ. In the research questionnaire, there are six sentences designed to measure the dependent variable.

Table 3.5 shows the dependent variable's operationalization, along with a list of recent studies that examined the LO dimensions through the same instrument—the DLOQ.

Table 3. 5  
Operationalization of the Dependent Variable

| Variable    | Sentence                                                                                                                        | Ranta (2018) | Sinclair (2016) | Perfetti (2016) | Leufvén et al. (2015) | Chajnacki (2007) | Watkins & Marsick, (2003) |
|-------------|---------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|-----------------|-----------------------|------------------|---------------------------|
| Performance | In my organization, response time for customer complaints is better than last year                                              | 12           | -               | 12              | -                     | 6                | 12                        |
|             | In my organization, average productivity per employee is greater than last year.                                                | 12           | -               | 12              | -                     | -                | 12                        |
|             | In my organization, customer satisfaction is greater than last year.                                                            | 12           | -               | 12              | -                     | -                | 12                        |
|             | In my organization, the number of new products and services is greater than last year                                           | 12           | -               | 12              | -                     | 6                | 12                        |
|             | In my organization, the percentage of total spending devoted to technology and information processing is greater than last year | 12           | -               | 12              | -                     | 6                | 12                        |
|             | In my organization, the percentage of individuals enrolled in training and development programs is greater than last year       | 12           | -               | 12              | -                     | 6                | 12                        |

Since there are two versions of the DLOQ, Table 3.5 also shows each study and the version of DLOQ utilized. In this table, (12) represents the longer version of the DLOQ, where 12 statements or sentences measure the performance. (6) represents the shorter version of the instrument, where

six statements or sentences measure the performance. The sign (-) indicates that the researcher mentioned has not used this sentence in his study.

Table 3.5 shows that all the sentences were used in other studies, particularly those using the longer version of DLOQ. Some researchers have not used any of the following sentences because either they deployed different instrument to measure the output of LO, such as (Sinclair, 2016) or was not intended to measure performance in their research, such as (Leufvén, Vitrakoti, Bergström, KC, & Målvist, 2015).

### **3.4.2 Operationalization of LO Dimensions**

The research model consisted of eight independent variables. Seven variables were extracted from Watkins and Marsick's LO framework, and the 8<sup>th</sup> variable was proposed by the researcher as a one that reflected the modern working culture. In this study, the researcher deployed three sentences to measure each independent variable.

Table 3.6 shows the seven independent variables' operationalization, along with a list of recent studies that studied the LO dimensions through the same instrument—the DLOQ.

The table shows each study and the version of DLOQ utilized. (43) represents the longer version of the DLOQ, where each dimension is measured by six sentences and one more sentence to measure the continuous learning. (21) represents the shorter version of the instrument, where three sentences measure each dimension. As shown in the table, all the questionnaire sentences were used in other studies, whether they utilized the longer or shorter version of DLOQ.

Table 3. 6

## Operationalization of Independent Variables Extracted from Watkins and Marsick Framework

| Variable             | Sentence                                                                                                          | Ranta (2018) | Sinclair (2016) | Perfetti (2016) | Leufvén et al. (2015) | Chajacki (2007) | Watkins & Marsick, (2003) |
|----------------------|-------------------------------------------------------------------------------------------------------------------|--------------|-----------------|-----------------|-----------------------|-----------------|---------------------------|
| Continuous Learning  | In my organization, people help each other learn.                                                                 | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, people are given time to support learning.                                                    | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, people are rewarded for learning.                                                             | 43           | 21              | 43              | 21                    | 21              | 43                        |
| Inquiry and Dialogue | In my organization, people give open and honest feedback to each other.                                           | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, whenever people state their view, they also ask what others think.                            | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, people spend time building trust with each other.                                             | 43           | 21              | 43              | 21                    | 21              | 43                        |
| Team Learning        | In my organization, teams/groups have the freedom to adapt their goals as needed.                                 | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, teams/groups revise their thinking as a result of group discussions or information collected. | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, teams/groups are confident that the organization will act as their recommendations.           | 43           | 21              | 43              | 21                    | 21              | 43                        |
| Embedded Systems     | My organization creates systems to measure gaps between current and expected performance.                         | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization makes its lessons learned available to all employees.                                             | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization measures the results of the time and resources spent on training.                                 | 43           | 21              | 43              | 21                    | 21              | 43                        |
| Empowerment          | My organization recognizes people for taking initiatives.                                                         | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization gives people control over the resources they need to accomplish their work.                       | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization supports employees who take calculated risks.                                                     | 43           | 21              | 43              | 21                    | 21              | 43                        |
| System Connectivity  | My organization encourages people to think from a global perspective.                                             | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization works together with the outside community to meet mutual needs.                                   | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | My organization encourages people to get answers from across the organization when solving problems.              | 43           | 21              | 43              | 21                    | 21              | 43                        |
| Leadership           | In my organization, leaders mentor and coach those they lead.                                                     | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, leaders continually look for opportunities to learn.                                          | 43           | 21              | 43              | 21                    | 21              | 43                        |
|                      | In my organization, leaders ensure that the organization's actions are consistent with its values.                | 43           | 21              | 43              | 21                    | 21              | 43                        |

Table 3.7 shows the operationalization of the digitalization strategy (the 8<sup>th</sup> independent variables), along with a list of recent studies that examined this variable.

This variable was measured using three sentences (items), the same as the rest of the independent variables. The first item was the business model, the second was customer experience, and the last item was the operational processes. These are the most representative items for digitalization strategy (Wroblewski, 2018; Gbadegeshin, 2019; Agboola, et al., 2019).

Table 3. 7  
Operationalization of Digitalization Strategy Independent Variable

| Variable                | Question                                                                                                                                     | Agboola et al.<br>(2019) | Gbadegeshin<br>(2019) | Wroblewsk<br>(2018) |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------|---------------------|
| Digitalization strategy | My organization utilizes digitalized data in developing products or providing services for customers. <b>(business model)</b>                | ✓                        | ✓                     | ✓                   |
|                         | The organization integrates digital channels or technologies to communicate products and services to its users. <b>(customer experience)</b> | ✓                        | -                     | ✓                   |
|                         | My organization automates the routine processes through recent digital applications. <b>(operational processes)</b>                          | ✓                        | ✓                     | ✓                   |

### 3.5 Sampling Plan

This section reviews the sampling plan, process, and techniques that the researcher used to conclude a whole by examining a part. Sampling refers to “the technique or the procedure the researcher adopts for selecting items for the sample from the population or universe” (Srinivas, 2016, p. 32). Some reasons drive the researcher to obtain a sample rather than complete coverage of the population. These reasons are mainly economy, timeliness, and the inaccessibility of some of the population.

Srinivas (2016) listed five main characteristics of a good sampling plan. The plan must: yield a genuinely representation of the population, result in a small sampling error (random sampling error), control bias, be within the budget, and finally, ensure that the results of the sample study are applicable to the population (Srinivas, 2016). Cooper et al. (2014) shorten these to two criteria, accuracy and precision, which can be achieved by increasing the sample size and decreasing bias (Cooper & Schindler, 2014).

In line with the good design characteristics, the researcher selected the most reliable sample plan suitable for the study's purpose and scope.

The following sub-sections investigate the target population, the sampling frame, the sample size, and the various kinds of sampling procedures that are available and which of these were used to draw conclusions that accurately represented the whole population.

### **3.5.1 Population Definition**

The population, also called the universe, is “all people or items with the characteristics that one wishes to study” (Bhattacharjee, 2012, p. 65). In this study, the target population is public sector organizations. According to the E-Government (Electronic Government) in Bahrain, there are around 75 ministries and governmental entities in Bahrain (EGovernment, 2020) that serve a population of approximately 1.5 million, according to 2020 statistics (Information and eGovernment Authority, 2020).

### **3.5.2 Sampling Frame**

A sampling frame or source list is “a list of members of a population from which members of a sample are then selected” (MacDonald &

Headlam, 2016, p. 13). The frame must be a list of accessible members in the target population (Bhattacharjee, 2012). In addition, a sampling frame needs to be accurate, complete, up-to-date, and relevant to the survey purposes (MacDonald & Headlam, 2016; Srinivas, 2016).

Thus, the research sampling frame in this study included 53 ministries and governmental entities, as expressed in table 3.8. The entities that were not compatible with the good frame characteristics were excluded.

Table 3. 8  
Sampling Frame

| Total Members in the Sampling Frame               |    |
|---------------------------------------------------|----|
| Ministries and governmental entities              | 75 |
| Entities with available contact info              | 58 |
| Entities restricted from participating in surveys | 5  |
| Accessible entities                               | 53 |

### 3.5.3 Sample Size

Deciding on the sample size, which refers to “the number of items to be chosen from the universe to form a sample” (Srinivas, 2016, p. 33) is tricky. The sample size must be ideal (optimum), which means a sample that “satisfies the requirements of representativeness, flexibility, efficiency, and reliability” (Srinivas, 2016, p. 33). This research’s main sampling objective is to obtain both a desirable degree of accuracy and a desirable confidence level with minimum cost.

The unit of analysis for this study was public sector representatives, who occupy middle and top management positions. The respondents may have been general managers, managers, heads of sections, or heads of units, or they may have held other managerial positions. Managerial positions were selected in line with other studies such as Paturkar et al. (2019),

Ambula et al. (2016), and Ratna et al. (2014), because those representatives had acquired adequate knowledge in the area under investigation.

The literature review revealed few guidelines regarding the research sample size suitable for examining the public sector. Table 3.9 shows the sample size for some related studies in other sectors. The sample size ranges from 50 to 565 respondents. The average is 168 for all, or 128 if the abnormal value is excluded.

Table 3. 9  
Sampling Plan in Literature

| Reference                                                | Industry                       | Sampling Method            | Unit of analysis          | Sample size |
|----------------------------------------------------------|--------------------------------|----------------------------|---------------------------|-------------|
| 1. (Aslan, 2019)                                         | Education                      | Cluster                    | Administrators & teachers | 565         |
| 2. (Pahurkar, Nair, & Kolte, 2019)                       | Knowledge-intensive industries | -                          | Managers                  | 50          |
| 3. (Elshafie, 2018)                                      | Education                      | Random sample              | College staff             | 100         |
| 4. (Mbuthia, 2018)                                       | Banking                        | Stratified random sampling | Bank staff                | 58          |
| 5. (Ambula, Awino, & Obonyo, 2016)                       | Large manufacturing firms      | -                          | Managerial positions      | 108         |
| 6. (Sinclair, 2016)                                      | Health                         | Self-selected staff        | All staff                 | 53          |
| 7. (Perfetti, 2016)                                      | Education                      | -                          | All staff                 | 121         |
| 8. (Thakur & Chaudhuri, 2015)                            | Banking                        | -                          | All staff                 | 379         |
| 9. (Leufvén, Vitrakoti, Bergström, KC, & Målqvist, 2015) | Health                         | Whole population           | All staff                 | 135         |
| 10. (Ratna, Khanna, Jogishwar, Khattar, & Agarwal, 2014) | Consulting                     | Convenience sampling       | First-line managers       | 50          |
| 11. (Al-Qutop, Futa, & Ma'ani, 2011)                     | Insurance                      | Simple random              | -                         | 230         |

The researcher decided to distribute 150 questionnaires. The distributed sample was chosen in proportion to the size of the ministry or the governmental authority, which was calculated on the basis of the number of employees. Forty surveys were distributed in ministries with a size of 1000 and more, 20 in those with a size between 500 and less than 1000, and 10 in those with a size of less than 500.

Table 3.10 represents the responses according to each cluster. Among the 150 questionnaires distributed, 144 were collected, and 136 were valid. Therefore, the response rate was 91%. There were eight invalid questionnaires, which includes those with illogical answers and responses from untargeted entities.

Table 3. 10  
Response Rate

| Cluster                                                              | Distributed | Valid | Response rate |
|----------------------------------------------------------------------|-------------|-------|---------------|
| 1. Customs Affairs (CA)                                              | 40          | 40    | 100%          |
| 2. Information & eGovernment Authority (E-GOV)                       | 20          | 18    | 90%           |
| 3. Ministry of Justice (MOJ)                                         | 20          | 17    | 85%           |
| 4. Ministry of Works, Municipalities Affairs & Urban Planning (MWMU) | 20          | 14    | 70%           |
| 5. Ministry of Finance & National Economy (MFE)                      | 10          | 8     | 80%           |
| 6. Ministry of Industry, Commerce & Tourism (MICT)                   | 10          | 8     | 80%           |
| 7. Civil Service Bureau (CSB)                                        | 10          | 8     | 80%           |
| 8. Survey & Land Registration Bureau (SLRB)                          | 10          | 8     | 80%           |
| 9. National Oil & Gas Authority (NOGA)                               | 10          | 7     | 70%           |
| 10. Others                                                           | -           | 8     |               |
| Totals Distributed                                                   |             |       | 150           |
| Total Collected                                                      |             |       | 144           |
| Total Invalid                                                        |             |       | 8             |
| Total Valid                                                          |             |       | 136           |
| Response Rate of the Collected Questionnaires                        |             |       | 96%           |
| Response Rate of the Valid Questionnaires                            |             |       | <b>91%</b>    |

### 3.5.4 Sampling Methods

Sampling methods are classified as either probability or non-probability methods. Probability sampling is based on a random selection of samples, while nonprobability sampling is based on non-random selection (Cooper & Schindler, 2014).

One of the main challenges involved in the sampling approach is the possibility that the sample is unrepresentative of its population. The main reasons for this possibility are sampling error and non-sampling error. Sampling error was defined by Srinivas (2016) as “the random variations in the sample estimates around the true population parameters” (Srinivas,

2016, p. 35). There are two fundamental sources for sampling error: chance, and sampling bias. Non-sampling error, meanwhile, is an error that results only from how the observations are made.

Sampling error can be reduced by increasing the sample size, but this decision will improve data collection cost and increase systematic bias too (Srinivas, 2016). So, the effective way of decreasing sampling error is generally to choose a better sampling design, which is also necessary to reduce non-sampling error.

Since it was difficult to prevent the chance of errors, the researcher tried their best to eliminate sampling bias by designing a good sampling plan. To guard against bias as much as possible, the researcher attempted to engage every unit of analysis (specified in the occupation category), hence eliminating sampling error. In addition, the researcher used a validated instrument and presented the questionnaire to qualified reviewers for checking, hence, eliminating non-sampling error.

However, the literature review uncovered few guidelines regarding the sampling method to investigate LO in the public sector, as shown in Table 3.9. According to the literature, the researchers selected simple random sampling, cluster, stratified, convenience, and other sampling methods.

Of the various sampling methods available, the researcher in this study selected cluster sampling. As shown in the sample frame, there are more than 50 ministries and governmental authorities in Bahrain (EGovernment, 2020). This means there are many subgroups or clusters in the research population. Cluster sampling is more economically efficient for a large population, and practical in the case of the unavailability of a complete sample frame (Cooper & Schindler, 2014). A successful survey

is the one that is directed to the proper respondent, because reaching the person best suited to completing a survey ensures an increased response rate and the generation of more accurate data (MacDonald & Headlam, 2016).

There is a form of trade-off between the cluster sampling advantages and disadvantages, presented in Table 3.11. Once the researcher is aware of this, she can achieve a balancing state that suits the research circumstances.

Table 3. 11  
Advantages and Disadvantages of Cluster Sampling

| <b>Advantages</b>                                                                | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
|----------------------------------------------------------------------------------|---------------------------------|----------------------------------------------|----------------------------|
| Economically efficient for a large population                                    | ✓                               | ✓                                            | ✓                          |
| Practical in the case of the unavailability of a full sample frame               | ✓                               | ✓                                            | ✓                          |
| <b>Disadvantages</b>                                                             | <b>Bhattacharjee<br/>(2012)</b> | <b>Cooper &amp;<br/>Schindler<br/>(2014)</b> | <b>Srinivas<br/>(2016)</b> |
| The cluster does not meet the heterogeneity requirement (statistical efficiency) | ✓                               | ✓                                            | -                          |

### 3.6 Research Validity, Reliability, and Protection of Human Rights

Whenever a survey or any other kind of measurement is used as part of the research's data collection process, the validity and reliability of that measurement and the respondents' human rights are vital. Research validity, reliability, and human rights protection are affected by the

research approach and methodology followed in conducting and managing the research process and content.

The positivist paradigm is usually validated by applying four criteria: internal validity, external validity, reliability, and objectivity (Kivunja & Kuyini, 2017). The following subsections discuss the researcher's efforts to achieve an acceptable level of validity, reliability, and human rights protection.

### **3.6.1 Validity**

Validity refers to “the extent a test measures what the researcher wishes to measure” (Cooper & Schindler, 2014, p. 257). It includes internal validity and external validity. Internal validity refers to the “extent to which the results obtained in a study are attributable to the independent variable that explains their occurrence and not some other factors”. External validity refers to the “degree to which the results obtained in a study can be generalized to other contexts” (Kivunja & Kuyini, 2017, p. 33).

Since Watkins and Marsick published their first DLOQ, they refined numerous iterations of the questionnaire, supported by a survey research methodologist and a statistician (Watkins & O'Neil, 2013). Since then, many researchers have used the DLOQ in their research, and this instrument has been extensively tested and found both valid and reliable (Marsick, 2013). Kim et al. (2015) identified and reviewed 90 articles, dissertations, and conference papers with precise consideration to DLOQ construct validity. They concluded that even though the DLOQ has incoherent factor extraction, it is an adequate model that fits the data according to CFA tests (Kim, Egan, & Tolson, 2015).

There are many methods for establishing research validity. Under the scope and limitations of this study, the researcher applied the following:

- The research instrument's initial validity was supported by the fact that all the LO dimensions (variables) contained within the research model were already documented in other LO models, and “digitalization” was counted too.
- The content validity test ensured that the instrument provided adequate coverage of the required research questions by seeking reviewers' and expert's opinions regarding the clarity, simplicity, and relevance to the research objective and scope.
- Instrumentation internal validity was assured by distributing a unified instrument to collect data from all respondents—the DLOQ.
- A test-retest procedure was implemented, in which the pilot test was carried out before the actual distribution of the questionnaire. Editing was done based on the pilot test result, which included replacing the unclear wording with terms familiar to the respondents who work in the public sector. The people who participated in the pilot test did not participate in the actual survey.
- Multiple data collection methods were used to collect historical and primary data to eliminate bias during data collection.
- The respondents were left to answer the questionnaire in whatever way was the most comfortable, to ensure that their responses reflected reality. Some preferred a self-administered questionnaire, while others preferred to be in direct contact with the researcher.
- The data were reviewed before analysis to ensure all the respondents were working in the public sector, and any unrelated respondents were excluded.

### **3.6.2 Reliability**

Reliability is concerned with “accuracy, precision, and consistency of the measurement” (Cooper & Schindler, 2014, p. 257). The reliable measurement is the one that produces stable or consistent results (Kivunja & Kuyini, 2017).

According to the high-reliability coefficients stated for the DLOQ in the literature, it is clear that the DLOQ is “consistently measuring respondents’ perceptions” (Kim, Egan, & Tolson, 2015).

The reliability estimate for the shorter 21 questions DLOQ is .93, which confirms that a learning culture can be accurately deduced through the observable behaviors in the DLOQ. The tool helps determine the LO dimensions’ relationships and other variables such as organizational performance (Sinclair, 2016).

In a new study, a coefficient value of 0.823 was achieved for DLOQ, which was acceptable for determining the internal consistency of a research instrument (Mbuthia, 2018). The current study’s reliability coefficient is presented in detail in the analysis and findings chapter.

### **3.6.3 Protection of Human Rights**

Regarding the protection of human rights, there are multiple ethical issues or ethical behaviors that need to be considered. Those considerations extended to all possible parties related to the research project, including research participants and audiences (Kivunja & Kuyini, 2017).

As part of the research axiology, according to Kivunja et al. (2017) there are four criteria for ethical conduct. First, “Teleology”, which refers to the “attempts made in research to make sure that the research results in

a meaningful outcome that will satisfy as many people as possible”. Second, “Deontology”, refers to “understanding that every action that will be undertaken during the research will have its consequence, intended to benefit participants, the researcher, the scholastic community or the public at large”. Third, “Morality” refers to the “intrinsic moral values that will be upheld during the research”, such as truthful interpretation of the data. Finally, “Fairness”, where there is a “need to be fair to all research participants and to ensure that their rights are upheld” (Kivunja & Kuyini, 2017, p. 28).

Accordingly, the researcher established the following measures to ensure a high level of protection of human rights:

- Participation in this study was voluntary. The volunteer respondents are more willing to complete the survey fully and honestly.
- The participants were invited to add any remarks in the free text space and request the research results if they wished to remain open to suggestions from participants in the research.
- This study respected the participants’ privacy, which means the information participants were required to reveal about themselves or organizations (Kivunja & Kuyini, 2017). The participants were not required to include their identification while filling the questionnaires.
- Data was treated confidentially, though access to it was granted to the related parties.
- The researcher avoided any possible bias sources to ensure research objectivity, honesty, and accurate data generation.

# CHAPTER FOUR

## ANALYSIS AND FINDINGS

## CHAPTER FOUR

### ANALYSIS AND FINDINGS

This study explores the applicability of implementing a governmental LO and identifying the relationship between LO and organizational performance. Since there are multiple models for LO, there was a need to discover whether the study model works in Bahrain public sector or not, and which of the proposed eight dimensions have a significant relationship with performance. The study model consisted of seven variables extracted from Watkins and Marsick's LO framework and an eighth variable, digitalization strategy, proposed by the researcher to reflect recent working culture.

The study's execution stage started with multiple pre-tests, including the pilot test, normality test, and reliability test. Data preparation was done to "ensure the accuracy of the data to ... be more appropriate for analysis" (Cooper & Schindler, 2014, p. 376). It included data filtering by cross-checking the answers, removing outliers and extreme cases, and unifying the demographic data's unspecified responses. Hence, data became ready for analysis. In this study, multiple analysis methods were implemented using numerous tools and software.

To achieve the study objectives and analyze the variety of data collected, the analysis and findings chapter is divided into six sections: the pre-analysis tests, analysis of the demographic data, analysis of the applicability of LO in the Bahraini public sector, analysis of the relationship between LO dimensions and the organizational performance, the interpretation of the study model, and ending with a Pareto analysis.

## 4.1 Pre-analysis Tests

Five pre-tests were implemented before the actual data analysis was executed. These were the pilot test, normality test, reliability test, descriptive statistics, and review of the respondent's remarks. These tests enabled the researcher to select the appropriate statistical analysis approaches and ensure adequacy, reliability, and representativeness.

### 4.1.1 Pilot Test

While the internal reliability was already established by previous DLOQ studies (Chajnacki, 2007), a pilot test with a selected group of 10 professionals and public sector managers was implemented in this study. Pilot testing aims to ensure baseline reliability for the data collection instrument before being distributed to the target unit of analysis.

DLOQ format and scoring are standardized, so the measures used in the questionnaire were only slightly modified to fit the purposes of the present research and the working culture in the Bahraini public sector. The questionnaire was written in both English and Arabic to suit the respondents' preferences. However, after the pilot study, several modifications were made to the questionnaire statements, as shown in Table 4.1:

Table 4. 1  
Pilot Test Modifications

| Section                          | Current Statement                                                                       | Modification                                                      |
|----------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Organizational Performance       | 2. In my organization, the average productivity per employee is greater than last year. | The previous statement doesn't suit the public sector activities. |
|                                  | 3. In my organization, customer satisfaction is greater than last year.                 | The previous statement doesn't suit the public sector activities. |
| Learning Organization Dimensions | 21. My organization supports employees who take calculated risks.                       | Clarify the "calculated risks" in the translated questionnaire.   |

### 4.1.2 Normality Test

A normality test is required to guide the researcher in choosing the tools and tests to use throughout the analysis process. The normal distribution “is a pattern for the distribution of a set of data, which follows a bell-shaped curve” (MacDonald & Headlam, 2016, p. 29). In the normal distribution, the data has less tendency to produce extreme values. Consequently, the researcher performs parametric tests such as analysis of variance (ANOVA), Pearson correlation, and regression analysis.

In this study, the normality test was performed using the kurtosis test (peakedness test), in which a neutral distribution has a kurtosis statistic value of 0, a flat distribution has a negative value, and a peaked distribution has a positive value (Cooper & Schindler, 2014). Kurtosis was selected because it serves two purposes: normality and peakedness. The sample is considered to be normally distributed if the standard score (z-value) ranges between +1.96 and -1.96.

Table 4.2 represents the kurtosis test for normality for each variable. It shows that all the z-values range between -1.96 and +1.96. Hence, the study data is sampled from a population that follows a normal distribution.

Table 4. 2  
Normality Test

| Variable (Construct)       | Statistics | Std. error | Z-value | Normal* |
|----------------------------|------------|------------|---------|---------|
| Organizational Performance | -0.253     | 0.413      | -0.613  | Yes     |
| Continuous Learning        | 0.388      | 0.413      | 0.939   | Yes     |
| Inquiry and Dialogue       | -0.195     | 0.413      | -0.472  | Yes     |
| Team Learning              | 0.031      | 0.413      | 0.075   | Yes     |
| Embedded Systems           | -0.185     | 0.413      | -0.448  | Yes     |
| Empowerment                | -0.423     | 0.413      | -1.024  | Yes     |
| System Connectivity        | -0.580     | 0.413      | -1.404  | Yes     |
| Strategic Leadership       | -0.210     | 0.413      | -0.508  | Yes     |
| Digitalization Strategy    | -0.049     | 0.413      | -0.119  | Yes     |

\* The sample is normally distributed if the Z-value sets between -1.96 and +1.96

### 4.1.3 Reliability Test

The Cronbach coefficient alpha was used to test the reliability of the study instrument. Cronbach's alpha value may vary between 1 and 0, where a value closer to 1 indicates high reliability, and the one closer to 0 indicates low reliability. Cronbach's alpha scores of .70 and higher are generally accepted and adequate for research purposes.

In this study, the overall Cronbach's alpha was .955, which indicates high instrument reliability. The Cronbach's alpha value for each variable (construct level) is presented in Table 4.3. Since the values ranged from .757 to .920, all variables had an acceptable reliability level.

Table 4. 3  
Reliability Test

| Variable (Construct)       | Variable Type | Cronbach's Alpha | Number of Items |
|----------------------------|---------------|------------------|-----------------|
| Organizational Performance | Dependent     | .776             | 6               |
| Continuous Learning        | Independent   | .807             | 3               |
| Inquiry and Dialogue       | Independent   | .884             | 3               |
| Team Learning              | Independent   | .882             | 3               |
| Embedded Systems           | Independent   | .757             | 3               |
| Empowerment                | Independent   | .850             | 3               |
| System Connectivity        | Independent   | .829             | 3               |
| Strategic Leadership       | Independent   | .920             | 3               |
| Digitalization Strategy    | Independent   | .919             | 3               |
| <b>Overall Model</b>       |               | <b>.955</b>      | <b>30</b>       |

The Pearson correlation test was applied to test the inter-correlation between the variables or the items' homogeneity (Cooper & Schindler, 2014). Every two variables have a correlation coefficient and a significance value. The correlation coefficient, which is between 1 and -1, indicates the direction of the relationship. The closer the correlation coefficient to 1 or -1, the stronger the relationship (MacDonald & Headlam, 2016). At the

same time, the significance indicates how significant the correlation is at the level of 0.01 (2-tailed).

Table 4.4 expresses the inter-correlation between the study variables. The significance of all correlation coefficients was .000, indicating a significant correlation at the level of 0.01. All the correlation coefficients were positive, which means the variables were positively correlated. The highest level of correlations among the proposed LO dimensions occurred between continuous learning and inquiry and dialogue. The lowest level of correlations among the proposed LO dimensions occurred between embedded systems and digitalization strategy. However, there was no perfect linear relationship between any two variables in the study.

Table 4.4 also shows the variance inflation factor (VIF) as an indicator of collinearity between the variables. The highest VIF was for team learning, while the lowest VIF was for digitalization strategy. Since all VIF scores are lower than 10, so there is no evidence of multicollinearity problem in the research model.

Table 4. 4  
Correlation Matrix

|    | OP*   | CL*         | ID*   | TL*   | ES*         | EM*   | SC*   | SL*   | DS*   | VIF   |
|----|-------|-------------|-------|-------|-------------|-------|-------|-------|-------|-------|
| OP | 1.000 |             |       |       |             |       |       |       |       |       |
| CL | .729  | 1.000       |       |       |             |       |       |       |       | 4.547 |
| ID | .662  | <b>.833</b> | 1.000 |       |             |       |       |       |       | 4.551 |
| TL | .705  | .800        | .788  | 1.000 |             |       |       |       |       | 4.564 |
| ES | .697  | .757        | .710  | .725  | 1.000       |       |       |       |       | 3.149 |
| EM | .730  | .769        | .785  | .753  | .757        | 1.000 |       |       |       | 3.949 |
| SC | .753  | .738        | .747  | .753  | .741        | .793  | 1.000 |       |       | 3.823 |
| SL | .588  | .660        | .677  | .788  | .683        | .682  | .732  | 1.000 |       | 3.261 |
| DS | .668  | .592        | .651  | .584  | <b>.552</b> | .559  | .638  | .623  | 1.000 | 2.035 |

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

#### 4.1.4 Descriptive Statistics

Table 4.5 shows the study model's descriptive statistics: the mean, standard deviation, minimum, and maximum values extracted from the collected data for both the dependent and independent variables.

The mean is a good center measure, with a normally distributed sample and a relatively symmetrical distribution sample. It is the “arithmetic average of a data distribution” (Cooper & Schindler, 2014, p. 400) and represents where the responses were centered. In this study, all the variables’ mean values were closer to the maximum value than the minimum value of each variable. The digitalization strategy variable had the highest mean of 4.799, while empowerment had the lowest mean of 4.1298.

The standard deviation is “a measure of spread” (Cooper & Schindler, 2014, p. 401) or dispersion. It tells how far the values are from the mean. The smaller the dispersion, the smaller the sample needed to represent the population (Cooper & Schindler, 2014). In this study, the standard deviation was low for all the variables.

Table 4. 5

Descriptive Statistics

| <b>Variables (Construct)</b> | <b>N</b> | <b>Mean</b> | <b>Standard<br/>Deviation</b> | <b>Minimum<br/>Value</b> | <b>Maximum<br/>Value</b> |
|------------------------------|----------|-------------|-------------------------------|--------------------------|--------------------------|
| Organizational Performance   | 136      | 4.3904      | .81393                        | 1.83                     | 6.00                     |
| Continuous Learning          | 136      | 4.3088      | 1.01626                       | 1.00                     | 6.00                     |
| Inquiry and Dialogue         | 136      | 4.2057      | 1.07221                       | 1.00                     | 6.00                     |
| Team Learning                | 136      | 4.1743      | 1.10798                       | 1.00                     | 6.00                     |
| Embedded Systems             | 136      | 4.1544      | 1.02828                       | 1.00                     | 6.00                     |
| Empowerment                  | 136      | 4.1298      | 1.13170                       | 1.00                     | 6.00                     |
| System Connectivity          | 136      | 4.5324      | 1.04704                       | 2.00                     | 6.00                     |
| Strategic Leadership         | 136      | 4.3552      | 1.12952                       | 1.00                     | 6.00                     |
| Digitalization Strategy      | 136      | 4.7990      | 1.02804                       | 2.00                     | 6.00                     |

As shown in Table 4.5, all of the variables had a maximum value of 6, which was the highest score assigned for measuring each variable. Most of the variables had a minimum value of 1, which was the lowest score assigned for measuring each variable.

#### 4.1.5 Other Remarks and Notes

The remarks that were recorded in the last section of the questionnaire may uncover a lot about the respondents' perceptions and feedback regarding the study variables or the data collection instrument. The unit of analysis is middle and top management level; therefore, their opinions are highly appreciated.

Table 4. 6  
Respondents' Remarks

| Serial | Respondents' Remarks                                                                                                                                                                                                                                                                                                            | Related Variables |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1      | Examples of digitalized data are Customs Electronic System usage and providing customs services through the IGA website or Bahrain Portal.                                                                                                                                                                                      | DS                |
| 2      | Technology is a must, especially in the COVID-19 pandemic.                                                                                                                                                                                                                                                                      | DS                |
| 3      | Automating routine operations through modern digital applications is a process that requires money and time, so there are still routines that are done manually.                                                                                                                                                                | DS<br>ES          |
| 4      | Knowledge and science address the progress of nations.                                                                                                                                                                                                                                                                          | OP                |
| 5      | Customs Affairs received two awards for the Horizon initiative for the governance of economic and customs information to facilitate trade: The Best Government Practices Award in the Kingdom of Bahrain 2019 and the Arab Government Excellence Award 2020. That is why it is considered an outstanding learning organization. | OP                |
| 6      | The corona pandemic demonstrated the importance of automating procedures and using digital data. Therefore, those who did not use information technology faced many problems with the corona pandemic's preventive measures, which affected their performance.                                                                  | DS<br>OP          |

Table 4.6 represents the respondents' remarks. In an attempt to analyze the observations, this table shows each remark and the closely related variable. Most of the remarks were closely associated with the digitalization strategy (serial numbers 1,2,3 and 6), followed by some

general remarks about the organizational performance (serial numbers 4,5 and 6). Some respondents provided the researcher with examples of successful practices from their perspective, referred to by serial numbers 1 and 5.

Two remarks touched on the COVID-19 pandemic, referred to by serial numbers 2 and 6. These remarks indicate the importance of technology and digitalization strategy for the organization in this time of crisis.

Finally, there were some expressions of gratitude and appreciation that have not been mentioned in the table due to the fact that they did not add value to the analysis. However, they add a positive point to the design of the data collection instrument.

## **4.2 Analysis of the Demographic Data**

This section presents the demographic data derived from frequency analysis of responses in the first section of the questionnaire, describing the survey sample. Table 4.7 shows the detailed data.

The study sample was distributed almost equally between men and women. Most respondents had a bachelor's degree as the highest degree obtained, comprised more than 58% of the total sample, followed by the master's degree of 25.7%. The respondents who worked in top management positions comprised 10.3% of the total, while 56.6% of the respondents occupied middle management positions. The remaining 25% were in other managerial positions such as acting heads of departments, project leaders, heads of shifts, and an advisor. Since the majority of the sample occupied middle management positions, the majority (40.4) had from 10 to less than 15 years' work experience, followed by the group with 5 to less than 10 years' experience (31.6% of the total).

Most of the respondents were from Customs Affairs, at 29.4% of the total sample, followed by Information & eGovernment Authority at 13.2% followed by Ministry of Justice at 12.5%. A further 10.3% of the total were from the Ministry of Works, Municipalities Affairs & Urban Planning. Each of the Ministry of Finance & National Economy, the Ministry of Industry, Commerce & Tourism, the Civil Service Bureau, and the Survey & Land Registration Bureau participated with around 6% proportion of the sample. The National Oil & Gas Authority had the lowest participation proportion, at 5.1%. The total other governmental authority and ministry respondents accounted for 5.9% of the sample, including respondents from National Audit Office and the “Not Specified” responses.

Table 4. 7  
Demographic Data

|                            | Demographics       | CA    | CSB  | E-GOV | MFE  | MICT | MOJ   | MWMU  | NOGA | SLRB | Others | Totals | %     |
|----------------------------|--------------------|-------|------|-------|------|------|-------|-------|------|------|--------|--------|-------|
| Gender                     | Female             | 16    | 3    | 12    | 6    | 4    | 11    | 5     | 1    | 6    | 6      | 70     | 51.5% |
|                            | Male               | 24    | 5    | 6     | 2    | 4    | 6     | 9     | 6    | 2    | 2      | 66     | 48.5% |
| Highest Degree<br>Obtained | High School        | 8     | 0    | 0     | 0    | 0    | 0     | 0     | 0    | 1    | 0      | 9      | 6.6%  |
|                            | Diploma            | 1     | 0    | 0     | 0    | 0    | 0     | 1     | 0    | 0    | 0      | 2      | 1.5%  |
|                            | Bachelor's degree  | 19    | 5    | 14    | 6    | 5    | 13    | 8     | 3    | 5    | 2      | 80     | 58.8% |
|                            | Master's degree    | 11    | 3    | 3     | 2    | 1    | 3     | 3     | 3    | 2    | 4      | 35     | 25.7% |
|                            | PH.D.              | 1     | 0    | 1     | 0    | 0    | 1     | 0     | 0    | 0    | 0      | 3      | 2.2%  |
|                            | (blank)            | 0     | 0    | 0     | 0    | 2    | 0     | 2     | 1    | 0    | 2      | 7      | 5.1%  |
| Occupation<br>Category     | Top Management     | 6     | 0    | 4     | 1    | 1    | 1     | 1     | 0    | 0    | 0      | 14     | 10.3% |
|                            | Middle Management  | 24    | 6    | 8     | 6    | 2    | 9     | 5     | 4    | 6    | 7      | 77     | 56.6% |
|                            | Other              | 8     | 1    | 5     | 1    | 3    | 7     | 5     | 3    | 0    | 1      | 34     | 25.0% |
|                            | (blank)            | 2     | 1    | 1     | 0    | 2    | 0     | 3     | 0    | 2    | 0      | 11     | 8.1%  |
| Work<br>Experience         | Less than one year | 0     | 0    | 1     | 0    | 0    | 0     | 0     | 0    | 1    | 0      | 2      | 1.5%  |
|                            | 1 to < 5 years     | 3     | 1    | 1     | 1    | 0    | 2     | 1     | 1    | 0    | 0      | 10     | 7.4%  |
|                            | 5 to < 10 years    | 12    | 1    | 3     | 2    | 3    | 3     | 7     | 3    | 3    | 6      | 43     | 31.6% |
|                            | 10 to < 15 years   | 15    | 5    | 4     | 4    | 3    | 10    | 6     | 2    | 4    | 2      | 55     | 40.4% |
|                            | 15 years and more  | 10    | 1    | 9     | 1    | 1    | 2     | 0     | 1    | 0    | 0      | 25     | 18.4% |
|                            | (blank)            | 0     | 0    | 0     | 0    | 1    | 0     | 0     | 0    | 0    | 0      | 1      | 0.7%  |
| Totals                     |                    | 40    | 8    | 18    | 8    | 8    | 17    | 14    | 7    | 8    | 8      | 136    |       |
| %                          |                    | 29.4% | 5.9% | 13.2% | 5.9% | 5.9% | 12.5% | 10.3% | 5.1% | 5.9% | 5.9%   |        | 100%  |

CA: Customs Affairs

CSB: Civil Service Bureau

E-GOV: Information & eGovernment Authority

MFE: Ministry of Finance & National Economy

MICT: Ministry of Industry, Commerce & Tourism

MOJ: Ministry of Justice

MWMU: Ministry of Works, Municipalities Affairs & Urban Planning

NOGA: National Oil & Gas Authority

SLRB: Survey & Land Registration Bureau

Other: Other Governmental Ministries and Authorities

## 4.3 Analysis of the Applicability of LO in Bahrain Public Sector

To test the applicability of LO in the public sector, the overall LO model had to be constructed and its significance tested. Accordingly, the overall LO model in this study was stated as the following:

$$\hat{y} = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8$$

or

$$OP = b_0 + b_1CL + b_2ID + b_3TL + b_4ES + b_5EM + b_6SC + b_7SL + b_8DS$$

Where

OP = Organizational Performance (dependent variable)

$b_0$  = Intercept (Alpha)

$b_i$  = Slope of the independent variables (Beta coefficient)

CL= Continuous Learning (independent variable)

ID= Inquiry and Dialogue (independent variable)

TL= Team Learning (independent variable)

ES= Embedded Systems (independent variable)

EM= Empowerment (independent variable)

SC= System Connectivity (independent variable)

SL= Strategic Leadership (independent variable)

DS= Digitalization Strategy (independent variable)

To determine the strength of the relationship between the dependent variable (OP) and the independent variables (proposed LO dimensions), multivariate analysis was applied in IBM SPSS Statistics (version 22) and expressed in the multiple regression model. The purpose of multiple

regression is to identify the proportion of the dependent variable which is explained by the independent variables (Cooper & Schindler, 2014). It attempts to predict the value of the dependent variable.

The regression analysis output in Table 4.8 consists of two sub-tables: the model summary and the ANOVA table for the overall significance test. The model summary sub-table shows the coefficient of determination (R square). R square indicates the proportion of variation in the dependent variable, explained by the independent variables' variation. Therefore, in this model, the variance in the proposed LO dimensions, taken as a set, accounts for 72% of OP variance. On the other hand, 28% of OP's variation is due to other variables not included in this study.

The ANOVA sub-table shows the significance of the model. The f-value and the p-value determine whether the relationship between the dependent variable and the independent variables is statistically significant or not. And in this case,  $F(8, 127)$  and  $P < .001$  (using  $\alpha=0.05$ ,  $D1=8$ ,  $D2=127$ ) indicated that the overall regression model is significant.

Table 4. 8  
Original Regression Analysis Output - Overall Test

| Model Summary |                   |          |                   |                            |  |
|---------------|-------------------|----------|-------------------|----------------------------|--|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |  |
| 1             | .846 <sup>a</sup> | .716     | .698              | .44754                     |  |

a. Predictors: (Constant), Digitalization Strategy, Embedded Systems, Strategic Leadership, Inquiry and Dialogue, System Connectivity, Empowerment, Continuous Learning, Team Learning

| ANOVA <sup>a</sup> |            |                |     |             |        |                   |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F      | Sig. or P         |
| 1                  | Regression | 63.998         | 8   | 8.000       | 39.940 | .000 <sup>b</sup> |
|                    | Residual   | 25.437         | 127 | .200        |        |                   |
|                    | Total      | 89.435         | 135 |             |        |                   |

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Digitalization Strategy, Embedded Systems, Strategic Leadership, Inquiry and Dialogue, System Connectivity, Empowerment, Continuous Learning, Team Learning

By recalling the following hypotheses, since the P-value for overall model is less than .05, then the null hypothesis is rejected, and the conclusion that the LO model is applicable in the Bahraini public sector was reached (as expressed in table 4.9).

Hypothesis 1 - Overall Testing:

H<sub>0</sub>1: There is no significant relationship between LO dimensions and OP

H<sub>a</sub>1: There is a significant relationship between LO dimensions and OP

Table 4. 9  
Hypothesis - Overall Test

| Hypothesis | Variable                  | P-test under $\alpha=0.05$ | Null Hypothesis | Relationship? |
|------------|---------------------------|----------------------------|-----------------|---------------|
| 1          | All independent variables | 0.000 < 0.05               | Rejected        | Significant   |

## 4.4 Analysis of the Relationship between LO Dimensions and the Organizational Performance

Having statistically confirmed that the overall regression relationship exists, the researcher proceeded to conduct the analysis to test the independent variables' individual contributions to the dependent variable. Hence, to test the relationship between each of the LO dimensions and the OP, multivariate analysis was applied as expressed in the multiple regression model, but by testing the independent variables individually.

Table 4.10 includes the coefficients table of the regression analysis output. All the proposed LO dimensions are listed in the table, along with the p-value. The existence of the relationship is identified by testing the p-value for each independent variable, and the null hypothesis is accordingly accepted or rejected.

Table 4. 10  
Original Regression Analysis Output - Individual Variable Test

| Coefficients <sup>a</sup> |            |                             |            |                           |           |
|---------------------------|------------|-----------------------------|------------|---------------------------|-----------|
| Model                     |            | Unstandardized Coefficients |            | Standardized Coefficients | Sig. or P |
|                           |            | B                           | Std. Error | Beta                      |           |
| 1                         | (Constant) | 1.081                       | .202       |                           | .000      |
|                           | CL         | .185                        | .081       | .232                      | .023      |
|                           | ID         | -.188                       | .077       | -.247                     | .016      |
|                           | TL         | .171                        | .074       | .233                      | .023      |
|                           | ES         | .101                        | .066       | .127                      | .132      |
|                           | EM         | .167                        | .068       | .232                      | .015      |
|                           | SC         | .213                        | .072       | .273                      | .004      |
|                           | SL         | -.165                       | .062       | -.229                     | .008      |
|                           | DS         | .257                        | .053       | .324                      | .000      |

a. Dependent Variable: Organizational Performance

#### Hypothesis 2 - Continuous Learning:

H<sub>0</sub>2: There is no significant relationship between CL and OP

H<sub>a</sub>2: There is a significant relationship between CL and OP

For CL, since the p-value .023 was less than .05, the null hypothesis was rejected, and it was concluded that there is a significant relationship between CL and OP.

#### Hypothesis 3 - Inquiry and Dialogue:

H<sub>0</sub>3: There is no significant relationship between ID and OP

H<sub>a</sub>3: There is a significant relationship between ID and OP

For ID, since the p-value .016 is less than .05, the null hypothesis was rejected, and it was concluded that there is a significant relationship between ID and OP.

#### Hypothesis 4 - Team Learning:

H<sub>0</sub>4: There is no significant relationship between TL and OP

H<sub>a</sub>4: There is a significant relationship between TL and OP

For TL, since the p-value .023 was less than .05, the null hypothesis is rejected, and it was concluded that there is a significant relationship between TL and OP.

#### Hypothesis 5 - Embedded Systems:

H<sub>0</sub>5: There is no significant relationship between ES and OP

H<sub>a</sub>5: There is a significant relationship between ES and OP

For ES, since the p-value .132 was greater than .05, the null hypothesis was accepted, and it was concluded that there is no significant relationship between ES and OP, or that ES does not uniquely contribute to OP in Bahrain's public sector.

#### Hypothesis 6 - Empowerment:

H<sub>0</sub>6: There is no significant relationship between EM and OP

H<sub>a</sub>6: There is a significant relationship between EM and OP

For EM, since the p-value .015 is less than .05, the null hypothesis was rejected, and it was concluded that there is a significant relationship between EM and OP.

#### Hypothesis 7 - System Connectivity:

H<sub>0</sub>7: There is no significant relationship between SC and OP

H<sub>a</sub>7: There is a significant relationship between SC and OP

For SC, since the p-value .004 is less than .05, the null hypothesis was rejected, and it was concluded that there is a significant relationship between SC and OP.

#### Hypothesis 8 - Strategic Leadership:

H<sub>0</sub>8: There is no significant relationship between SL and OP

H<sub>a</sub>8: There is a significant relationship between SL and OP

For SL, since the p-value .008 is less than .05, the null hypothesis was rejected, and it is concluded that there was a significant relationship between SL and OP.

#### Hypothesis 9 - Digitalization Strategy:

H<sub>0</sub>9: There is no significant relationship between DS and OP

H<sub>a</sub>9: There is a significant relationship between DS and OP

For DS, since the p-value .000 is less than .05, the null hypothesis was rejected, and it was concluded that there is a significant relationship between DS and OP.

Table 4.11 summarizes the individual-level model testing. It shows each hypothesis, related variable, p-test, status of each null hypothesis, and the identified relationship with OP.

Table 4. 11

Hypotheses - Individual Variable Test

| Hypothesis | Variable | P-test under<br>$\alpha=0.05$ | Null Hypothesis | Relationship? |
|------------|----------|-------------------------------|-----------------|---------------|
| 2          | CL       | $0.023 < 0.05$                | Rejected        | Significant   |
| 3          | ID       | $0.016 < 0.05$                | Rejected        | Significant   |
| 4          | TL       | $0.023 < 0.05$                | Rejected        | Significant   |
| 5          | ES       | $0.132 > 0.05$                | Accepted        | Insignificant |
| 6          | EM       | $0.015 < 0.05$                | Rejected        | Significant   |
| 7          | SC       | $0.004 < 0.05$                | Rejected        | Significant   |
| 8          | SL       | $0.008 < 0.05$                | Rejected        | Significant   |
| 9          | DS       | $0.000 < 0.05$                | Rejected        | Significant   |

## 4.5 Interpretation of the Study Model

The analysis in the previous sections gave us two main findings. First, the LO model is applicable in Bahrain's public sector. Second, there are significant relationships between organizational performance and seven out of the eight proposed LO dimensions: continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic

leadership, and digitalization strategy. These findings led us to a further step in order to interpret the study model.

Since there is an insignificant variable in the regression equation, the regression analysis has been rerun without this variable in order to reformulate the equation and interpret the result.

Table 4.12 represents the second regression analysis output after rerunning the analysis. It consists of three sub-tables: the model summary, ANOVA table, and the coefficients table.

Table 4. 12  
Revised Regression Analysis Output

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .843 <sup>a</sup> | .710     | .695              | .44981                     |

a. Predictors: (Constant), Digitalization Strategy, Empowerment, Strategic Leadership, Continuous Learning, System Connectivity, Inquiry and Dialogue, Team Learning

| ANOVA <sup>a</sup> |            |                |     |             |        |                   |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F      | Sig. or P         |
| 1                  | Regression | 63.537         | 7   | 9.077       | 44.860 | .000 <sup>b</sup> |
|                    | Residual   | 25.898         | 128 | .202        |        |                   |
|                    | Total      | 89.435         | 135 |             |        |                   |

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Digitalization Strategy, Empowerment, Strategic Leadership, Continuous Learning, System Connectivity, Inquiry and Dialogue, Team Learning

| Coefficients <sup>a</sup> |            |                             |            |                           |           |
|---------------------------|------------|-----------------------------|------------|---------------------------|-----------|
| Model                     |            | Unstandardized Coefficients |            | Standardized Coefficients | Sig. or P |
|                           |            | B                           | Std. Error | Beta                      |           |
| 1                         | (Constant) | 1.116                       | .202       |                           | .000      |
|                           | CL         | .217                        | .079       | .271                      | .007      |
|                           | ID         | -.190                       | .077       | -.250                     | .015      |
|                           | TL         | .176                        | .075       | .240                      | .020      |
|                           | EM         | .190                        | .066       | .264                      | .005      |
|                           | SC         | .231                        | .071       | .297                      | .002      |
|                           | SL         | -.152                       | .061       | -.211                     | .015      |
|                           | DS         | .257                        | .054       | .325                      | .000      |

a. Dependent Variable: Organizational Performance

In the revised regression output, the variance in the proposed LO dimensions, taken as a set, accounts for 71% of the variance in OP. In addition, the overall regression model is still significant for  $F(7, 128)$  and  $P < .001$  using  $\alpha=0.05$ .

The relationship between the variables can be interpreted using the following revised regression equation based on the coefficients of each independent variable:

$$OP = 1.116 + .217 CL - .19 ID + .176 TL + .19 EM + .231 SC - .152 SL + .257 DS$$

The regression model's interpretation starts with the intercept, which is the expected mean value of the dependent variable when all independent variables are zero. Therefore, the average level of organizational performance is 1.116 when there is no continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic leadership, or digitalization strategy in the organization.

The independent variable's beta coefficient ( $b_i$ ) measures Y's change given a unit change in X, holding all the other explanatory variables constant. Accordingly,  $b_1$  suggests that if the percentage of continuous learning increases by 1%, then the organizational performance will increase by 22%, holding all other variables constant.  $b_3$  suggests that if the percentage of team learning increases by 1%, then the organizational performance will increase by 18%, holding all other variables constant.  $b_5$  suggests that if the percentage of empowerment increases by 1%, then the organizational performance will increase by 19%, holding all other variables constant.  $b_6$  suggests that if the percentage of system connectivity increases by 1%, then the organizational performance will increase by

23%, holding all other variables constant. In addition,  $b_8$  suggests that if the percentage of digitalization strategy increases by 1%, then the organizational performance will increase by 26%, holding all other variables constant.

Conversely,  $b_2$  suggests that for every 1% increase in inquiry and dialogue, organizational performance will decrease by 19%, holding all other variables constant. And  $b_7$  suggests that for every 1% increase in strategic leadership, organizational performance will decrease by 15%, holding all other variables constant.

One of the purposes of multiple regression is to predict the dependent variable from the independent variables (MacDonald & Headlam, 2016). In this section, the original regression equation has been altered into the revised regression equation to be used as a prediction equation, taking into account the coefficient of determination or the certainty level.

Based on the revised regression equation, organizational performance can be predicted from continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic leadership, and digitalization strategy in an organization. It can be significantly increased by improving continuous learning, team learning, empowerment, system connectivity, and digitalization strategy. It can be relatively increased by minimizing the bad impact of inquiry and dialogue and strategic leadership.

## **4.6 Pareto Analysis**

A Pareto diagram is “a graphical presentation that represents frequency data as a bar chart, ordered from most to least, overlaid with a line graph denoting the cumulative percentage at each variable level”

(Cooper & Schindler, 2014, p. 662). This analysis helps in decision-making by assessing and prioritizing different variables through the benefit or impact each one will provide. It shows visually which variables are more important.

Looking at the regression analysis result, one can see there are some negative relationships between OP and some LO dimensions. The beta coefficients of the independent variables are very close to each other. Consequently, there is a need for an additional tool to identify the priority to be suggested for the decision-maker, which is the purpose of using this analysis in this study.

A Pareto analysis was implemented through the following steps:

1. Identify the main purpose of the analysis in this study, which identifies the main variables that account for the increase in the organizational performance or OP.
2. List the possible variables that impact the OP, which are the LO dimensions that have a significant relationship with OP. These are continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic leadership, and digitalization strategy.
3. Filter the cases under the analysis. The analysis is about the variables that account for the increase in organizational performance, so only the high-performance cases were selected to be analyzed. The criterion was  $OP \Rightarrow 4$ .
4. Score each variable according to the appropriate measurement. In this step, the researcher counted the frequencies of the extreme high agreement for each case with a high OP. The criterion for counting was a variable value  $\Rightarrow 5$ .

5. Calculate the percentage of the scores from the total score. This step includes calculating the percentage of agreement or the percentage of each dimension frequencies over the total frequencies of all dimensions.
6. Calculate the cumulative percentage. The cumulative percentage must be calculated for the variables after being sorted from the highest to the lowest in terms of score or frequencies.
7. Draw the Pareto diagram, in which the bars represent the frequencies, and the line represents the cumulative percentage.
8. Interpret the conclusions based on the diagram.

Table 4. 13  
Pareto Table

| <b>Dimension</b> | <b>Frequencies of<br/>Extreme High<br/>Agreement</b> | <b>Agreement<br/>Percentage</b> | <b>Cumulative<br/>Percentage</b> |
|------------------|------------------------------------------------------|---------------------------------|----------------------------------|
| DS               | 51.00                                                | 21.98%                          | 21.98%                           |
| SC               | 44.00                                                | 18.97%                          | 40.95%                           |
| SL               | 33.00                                                | 14.22%                          | 55.17%                           |
| CL               | 26.00                                                | 11.21%                          | 66.38%                           |
| ID               | 26.00                                                | 11.21%                          | 77.59%                           |
| TL               | 26.00                                                | 11.21%                          | 88.79%                           |
| EM               | 26.00                                                | 11.21%                          | 100.00%                          |
| <b>Total</b>     | <b>232.00</b>                                        |                                 |                                  |

Pareto table number 4.13 reflects the application of the pre-mentioned steps. The first column represents the LO dimensions, arranged in descending order according to the frequencies of obtaining extremely high agreement in the questionnaire, which are listed in the second column. The third column lists the calculated agreement percentage. The final column shows the cumulative percentage.

Figure 4.1 shows the Pareto chart for LO dimensions. In this chart, the bars represent the LO dimensions, ordered from the highest to the lowest according to the frequencies of extremely high agreement from left

to right. The line represents the cumulative percentage that starts with the percentage of the first dimension in the drawing and 100%. Therefore, the more influential or more beneficial dimensions accumulate on the left side of the drawing.

The Pareto analysis identified the dimension that decision-makers need to focus on to improve organizational performance. These dimensions are digitalization strategy, followed by system connectivity, and strategic leadership. These dimensions together would possibly comprise 55% of causes of high organizational performance.

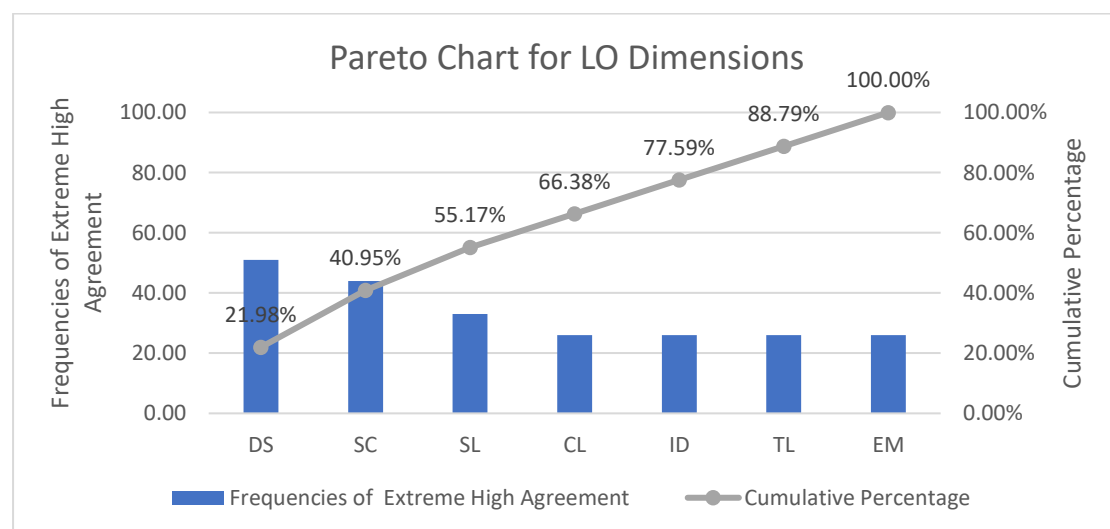


Figure 4. 1

Pareto Chart

## CHAPTER FIVE

### DISCUSSION

## CHAPTER FIVE

### DISCUSSION

By utilizing Watkins and Marsick's LO framework with the additional proposed dimension \_digitalization strategy\_ this study tested the applicability of implementing a governmental LO, and identified the significance of the relationship between the proposed LO dimensions and organizational performance. In an attempt to fill the gap in the literature, this study focused on Bahrain's public sector.

This chapter provides an overview of the meaning of the study findings within the context of the literature. It clarifies the scientific research implications in the same field, as well as those for policymaking, decision-making, and other HRM practices in governmental organizations.

The study researcher proposed an additional variable to the leading Watkins and Marsick's model, hence it expands the range of implications to include LO terminology, the digitalization strategy. Moreover, discussing public sector performance leads to discussing broader views and obligations, hence discussing two important issues facing the public sector, namely: crisis management and sustainable development goals.

As a further illustration, this chapter is divided into two sections: the refined research model and the study implications.

#### **5.1 Refined Research Model**

The analysis revealed two main results. First, a learning organization is applicable in Bahrain's public sector. Second, there is a significant relationship between organizational performance and continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity,

strategic leadership, and digitalization strategy in Bahraini public organizations. At the same time, there is no significant relationship between embedded systems and organizational performance.

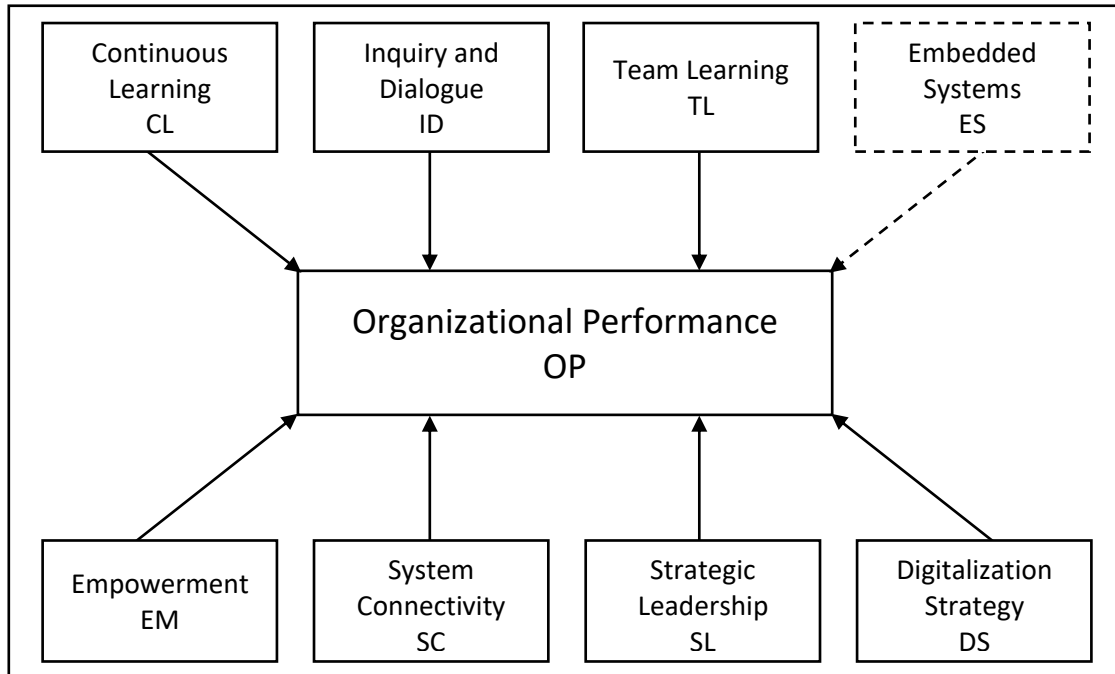


Figure 5. 1

Refined Research Model

Based on the study findings, the research revised model is presented in Figure 5.1. Here, the significant relationship between the dependent variable and the independent variables is expressed in a direct solid line in the model. In contrast, the insignificant relationship is expressed in the dotted line.

The LO model as a whole is **applicable** in public sector, just as it would be in the private sector, since the study findings were consistent with the results of several related studies, such as that by Abenga and Sarange (2018), who concluded that LO is applicable in the education sector (Abenga & Sarange, 2018), banking sector (Mbuthia, 2018), telecommunication sector (Qawasmeh & Al-Omari, 2013), manufacturing industry (Ambula, Awino, & Obonyo, 2016), health (Leufvén, Vitrakoti, Bergström, KC, & Målqvist, 2015) and other sectors.

In addition, the DLOQ is applicable in the Bahraini context, just as it is in Saudi Arabia (Elshafie, 2018), and in Jordan (Qawasmeh & Al-Omari, 2013; Al-Qutop, Futa, & Ma'ani, 2011). These results are compatible with those obtained by Kim et al. (2015). They informed the applicability of the Watkins and Marsick model and the supported instrument by saying that “even though DLOQ has incoherent factor extraction, it is an adequate tool that fits the data according to CFA tests” (Kim, Egan, & Tolson, 2015).

**Reliability** gives signs of the robustness of the instrument (Cooper & Schindler, 2014). The high reliability of .955 Cronbach’s alpha, which is compatible with other researcher observations (Watkins & Kim, 2018), indicates that the proposed study model is robust and repeatable with a high degree of consistency.

The **significant relationship** between OP and CL, ID, TL, EM, SC, and SL is consistent with the findings of most of the studies in the literature, such as those by Chajacki (2007), Perfetti (2016), and others in Watkins and Kim’s (2018) multi-context study. It means that organizational performance can be predicted through the continuous learning opportunities in the organization, a high degree of empowerment, the extent of the connection between the organization and its community and environment, the level of collaboration and team learning. In addition, it can be predicted through, the type of inquiry and dialogue available, the positive impact of strategic leadership, and the digitalization strategy.

The only variable that revealed an **insignificant relationship** with the OP was ES, with a level of significant .132. The result is not surprising, because this variable has been ranked last, in terms of relationship significance, in multiple studies such as Sinclair (2016). In a comprehensive multi-context DLOQ study, ES ranked the last among the

dimensions in the level of importance in all contexts (Watkins & Kim, 2018). The researchers concluded that “there are cultural differences in how important each dimension is” (Watkins & Kim, 2018). The insignificant relation result probably indicates that it is not important to deliberately establish systems to capture and share learning in public sector, or that it may be enough to have a digitalization strategy that may provide such a healthy environment for learning and knowledge management!

**DS**, on the other hand, had the strongest significant relationship with OP. Despite being the additional variable to the Watkins and Marsick LO model, it did prove its impact on OP in the public sector. When compared to studies tested the impact of digitalization solely on the OP, the results are closely related. These studies include digitalization and performance in the banking sector (Agboola, et al., 2019), and digitalization and corporate sustainability impact performance (Forcadell, Aracil, & Ubeda, 2020).

The revised regression equation showed that organizational performance could be relatively increased by minimizing the negative impact of inquiry and dialogue and strategic leadership. These results are **unique to the public sector**, since most previous studies identified a positive relationship between OP and both ID and SL. The uniqueness may result from the different indicators used in non-profit sector to measure the performance, covering the mission and knowledge performance (Perfetti, 2016).

The **negative relationship** can be explained through the characteristics of the public sector. One of the public sector's main characteristics is its bureaucratic and rigid operations (Dewah & Mutula, 2016). These can lead to reversing the impact of inquiry and dialogue in the OP equation. Promote inquiry and dialogue in the public sector may

cause a delay in the operations within the bureaucratic systems, or this is what seems like from the point of view of the managers in this sector. Knowledge sharing through inquiry and dialogue is not valued in the public sector. This attitude may be derived from hierarchical leadership and few incentives to transfer knowledge (North & Kumta, 2018).

Considering that the unit of analysis was top and middle managerial positions, it seems that those in such positions underestimate their role in improving organizational performance, or maybe they think that an increase in performance can be achieved regardless of their behavior. This thinking possibly exists in the public sector because of lack of appropriate models, or due to “brain drain” as indicated in the literature (Dewah & Mutula, 2016). In the lowest level of knowledge management maturity, leaders think “networking leads to lack of accountability”, also leaders do not hesitate to reward knowledge hoarders (North & Kumta, 2018). The incidence of these immature behaviors of leaders in the public sector may cause SL's negative impact on the research equation.

The negative relationship between OP and both ID and SL in this study is in line with the studies listing “ensuring leadership support for knowledge management and learning” as one of the challenges of building or promoting the LO (Asian Development Bank, 2009).

It is noted from the study findings that the term “LO” has a broad meaning that is not limited to **training**, but rather covers multiple dimensions across the individual, team, organization, and societal levels. The individual-level dimensions are CL and ID. The team dimension is TL. The organization dimensions are EM and DS. While the societal dimensions are SC and SL.

Interestingly, the dimensions that decision-makers need to focus on to achieve high organizational performance are digitalization strategy, followed by system connectivity, and strategic leadership. According to the **Pareto analysis**, these dimensions together would possibly comprise 55% of causes of high organizational performance. Thus, they should be prioritized by management seeking to improve performance.

## **5.2 Study Implications**

Prior studies in the literature have shown that LO dimensions impact the OP (Watkins & Dirani, 2013; Watkins & Kim, 2018). Yet, there is a lack of studies that mentioned the public sector as an applicable area in which to develop the LO. Therefore, the study's revised model has some practical implications on scientific research in the same field and policymaking, decision making, and other HRM practices in the governmental organizations. In particular these implications are related to LO terminology, the digitalization strategy, crisis management, and sustainable development.

### **5.2.1 Learning Organization Term**

In the 1990s, Senge was concentrating on the LO building blocks more than defining the new term. At that time, it seemed more important to convince the reader of the content and blocks of the LO than to define a term that was not convincing yet. So, both Senge and the authors who have defined the LO by following Senge's inspiration are appreciated. The literature shows the variety of researchers' contributions in designing a definition for the LO due to the variety of scientific domains associated with the LO.

After 30 years or after identifying the LO concept, the LO idea developed over three eras or stages. In the first 10 years, which suggested

to be called the definition stage, authors and specialists formed the concept and principles of LO. In the second 10-year period, the idea became clear, so researchers implemented and tested LO in practice (Kim, Egan, & Tolson, 2015), in which suggested to be called the expansion stage.

More recently, some researchers have thought that the term “LO” may not survive (Watkins & Kim, 2018), and some business philosophers have suggested abandoning the LO idea (Ortenblad, 2019). They call for new ideas, new styles, or new fashion! So, there are some concerns that the LO, “like many other promising ideas, may be relegated to the stockpile of outmoded fads” (Watkins & Kim, 2018).

However, “LO” term is more acceptable and comfortable for the audience than other substitutes such as “knowledge management culture”. Since everyone practices learning, whether they are individuals or organizations, the expected “actionable output” (Chajnacki, 2007) is easier to achieve by encouraging all parties to learn. Leaders may influence larger numbers of stakeholders by saying, “let us learn together” than saying “let's manage our knowledge!”.

“LO” is a simple, understandable, and straightforward term. This term has the distinction of being far from technical. Using it would expand the segment of concerned participants in an organization. It is a favorable term to increase participation, the number of respondents, feedback, and commitment level, precisely as Senge (1990) envisioned.

From my point of view, learning cannot be abandoned. Learning at any level, whether individual, group, organizational, or societal, is a lifetime style. Similarly, LO can have new methods or means without abandoning its identity.

Accordingly, researchers should be careful when studying issues related to LO or HRD, so that the concept does not lose its meaning and usefulness, which the father of the LO envisioned. I believe that this kind of such research is needed, and can make valuable contributions to developing proactive public organizations.

Policymakers are encouraged to keep the LO concept and dimensions in mind when setting public sector policies. HRM practitioners and leaders must practice the significant LO dimensions and incorporate these dimensions in their daily work.

### **5.2.2 Digitalization Strategy**

Digitalization is not just using programs and electronic machines to process, transfer, and store data. Digitalization is “social implications of increased computer-assistance, new media and communication platforms for the economy, society and culture” (Schumacher, Sihm, & Erol, 2016, p. 3). It sits behind the latest business model, the latest communication media used with customers, the newest way of doing business, and the latest way of maintaining business culture. It is the current method of exploiting information technology, whether for learning or in any other business process (Parviainen, Kääriäinen, Tihinen, & Teppola, 2017).

The United Nations E-Gov survey shows that digitalization enables governments to maintain alignment with governance principles and cover the aspects of accountability, effectiveness, openness, and trustworthiness, hence grant a high level of EGDI, as is the case in Bahrain (United Nations a, 2018). Digitalization can change the public sector's core functions, including policy development and implementation (Mahmood, Weerakkody, & Chen, 2019). An increased emphasis on performance has

highlighted the need for public organizations to develop effective strategies such as digitalization strategies.

The time required for learning has changed because learning capabilities have been enhanced due to new technology and new methods of exploiting technology. Ten years ago, a one-month course would have been quite a fast way to learn specific skills or knowledge, but today, a one-hour live tutorial or virtual training program may be enough.

Haak (2018) listed the 18 human resource trends and opportunities for LO. He indicated the need for personalized learning, the shift from individuals to teams and networks learning, the shift to job roles with flexible assignments, speed and fun learning (Haak, 2018), which are the main focus of digitalization (Schumacher, Sihn, & Erol, 2016).

Considering the LO characteristics, one may conclude that it is not a learning organization, the one that does not exploit technology capabilities, or what is called digitalization.

The notion of a digitalization strategy is like strategic leadership, has emerged lately, but radically changed the learning techniques, media, and environment. It deserves to be one of the LO dimensions, and will possibly reduce the need for establishing systems to capture and share learning, which is the embedded system dimension. In line with Kim et al. (2015), adding the digitalization strategy as a LO dimension is part of the ongoing operation to construct a valid instrument or model.

Accordingly, researchers are encouraged during research design to reinforce, as much as possible, their study models and instruments with digitalization elements to support the business world with the impact of modern LO. Public sector policymakers need to think about digitalization as the main dimension of building and maintaining a LO. Decision-makers

and HRM practitioners in the organizations must include digitalization practices into their plans and use digitalized methods for measuring performance. Looking at the best practices of enforcing digitalization in the organization would help the public sector to move from the traditional organization model to a more modern organization model, hence enhancing organizational performance.

### **5.2.3 Crisis Management and Sustainable Development**

Adopting the learning orientation contributes to organizational performance and survival in a competitive environment (Hussein, Mohamad, Noordin, & Ishak, 2014), survival in unusual conditions, and predicting a promising future in terms of sustainability.

Unlike the private sector, the public sector serves many clients and customers. It represents the country in the international community, and global indicators and goals bind it. Discussing public sector performance leads to discussing broader views and obligations, such as crisis management and sustainable development goals.

#### **5.2.3.1 Crisis Management**

Disasters hurt past and present development initiatives, aside from preventing future growth. Humanity has known the spread of many life-threatening pandemics, the degree of which varies according to how to deal with them and to overcome the negative impact resulting from them. Perhaps the most crucial aspect of containing these crises is to bypass the potential health, social, and economic impacts.

The coronavirus (COVID-19) pandemic is one of the severe global health crises that have killed and infected too many people so far, and threatened economic and social livelihood systems, constituting a shock to many governments.

Today, public institutions' survival depends on how these institutions accept changes and improve practices and competitiveness (Hussein, Mohamad, Noordin, & Ishak, 2014). Successful management depends on how an organization effectively responds to the known conditions and unknown challenges emerging. Therefore, the governments are required to use possible initiatives to prevent the disaster, react to it, and recover from it (United Nations a, 2018). That is why LO remains a subject of discussion among academics, researchers, and experts in the strategic management field (Qehaja, Kutllovci, & Havolli, 2017).

As mentioned in the United Nations survey 2018, “E-gov is a tool to better anticipate and respond to disasters” (United Nations a, 2018). Thus, LO models, focusing on digitalization strategy as a dimension, are important in crisis management. Since LO is widely used for innovation and survival (Hussein, Mohamad, Noordin, & Ishak, 2014; Hussein, Omar, Noordin, & Ishak, 2016) and change mechanisms (Diaz-Fernandez, Pasamar-Reyes, & Valle-Cabrera, 2017), so it could be the long-term solution for governmental organizations to easily manage crises such as COVID-19.

Accordingly, researchers in the field of strategic management and organization behavior need to think about linking the LO dimensions to organizations' behavior in the case of crisis or disaster. Policymakers must focus on proactive strategies to manage the organizations instead of a reactive one, because reactivity misdirects the attention to problem-solving rather than readiness and creation (Robbins & Judge, 2013). Public sector policymakers must employ a digitalization strategy to benefit the country and the people in normal circumstances and crises.

Decision-makers and leaders are encouraged to improve the learning environment and reinforce learning within their organizations, in order to

be prepared for any change and challenges. They should not underestimate their role in keeping their organizations robust under typical or crisis circumstances.

### **5.2.3.2 Sustainable Development**

Being a governmental LO corresponds to the United Nations Sustainable Development Goals (SDGs). The SDGs set out government, private sector, and academic visions for sustainable development by integrating its economic, social, and environmental dimensions. The 2030 Agenda for Sustainable Development is a transformative agenda that aims and achieving international community priorities in 15 years (United Nations b, 2018).

There are 17 SDGs. Among them, the governmental LO is closely related to goal number 4, which is “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by focusing on target 4.7, which determines the necessity to obtain skills and knowledge to promote sustainable development (United Nations b, 2018). This goal can be achieved by a governmental entity if it “proactively uses learning in an integrated way to support and catalyze growth for individuals, teams, entire organizations, and the institutions and communities with which they are linked” (Chajnacki, 2007) or, in other words, if the governmental entity is a LO.

LO is an enabler for SDG number 11, “Make cities and human settlements inclusive, safe, resilient and sustainable” (United Nations b, 2018), and mainly target 11.b, which is about cities' adoption of integrated policies and plans toward inclusion, resource efficiency, resilience to disasters, and other issues. SC is one of the LO dimensions that refers to interdependencies between the organization and its internal and external

environment, including the customers, the society, and the earth. This dimension enables the integration of policies and plans among the related parties.

Digitalization as a LO dimension is critical in achieving SDGs. The United Nations reports emphasize the use of information and communication technologies in government. This supports the implementation of SDG in an integrated and inclusive manner. It provides the necessary tools to enable policy integration of the international community across economic, social, and environmental dimensions (United Nations a, 2018).

Forcadell et al.'s (2020) findings shed light on the mutual reinforcement of corporate sustainability and digitalization strategies in enhancing banks' efficiency and performance (Forcadell, Aracil, & Ubeda, 2020). However, what is striking is that some of the world's most sustainable organizations use LO as an organizational strategy or plan (Wilson & Beard, 2014).

“Strengthening resilience is at the heart of all sustainable development goals” (United Nations a, 2018), taking into account that the LO is “an organization that has developed the continuous capacity to adapt and change” (Robbins & Judge, 2013, p. 639). Thus, an LO is an organization that is ready to achieve sustainable development goals. Moreover, achieving SDGs starts within the organization. Since LO depends on learning to build long-term sustainability (Watkins & Kim, 2018), being a LO is a good beginning for community and world sustainability.

The United Nations has recommended that politicians, policymakers and public officials create and adapt new policies to promote resilience and sustainability (United Nations a, 2018). Accordingly, SGS enforces

government institutions to build institutions like LO. In building such institutions, it is important to increase transparency and openness in governance processes (United Nations a, 2018), which are crucial in a LO too.

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

#### 6.1 Conclusion

Environmental challenges and opportunities, such as technological capabilities, globalization, national governance programs, and the competition between the public and private sectors in serving people, enforce the public sector—including the public sector in the Kingdom of Bahrain—to shift from the traditional organizational model to the LO one.

The concept of LO has been widely used as an accompaniment to performance, competitive advantage, innovation, and survival (Hussein, Mohamad, Noordin, & Ishak, 2014; Hussein, Omar, Noordin, & Ishak, 2016). Strategically, organizational learning has become a mechanism for change and renewal (Diaz-Fernandez, Pasamar-Reyes, & Valle-Cabrera, 2017).

This study explored the applicability of implementing a governmental LO and identifying the significance of the relationship between LO and the organization's performance. Therefore, the mixed design approach was used to collect data from the research clusters. The DLOQ, which measures the respondents' perception of the proposed eight dimensions, was the study instrument.

The study found that LO is applicable in Bahrain's public sector, and that there are significant relationships between organizational performance and seven out of the eight proposed LO dimensions: continuous learning, inquiry and dialogue, team learning, empowerment, system connectivity, strategic leadership, and digitalization strategy. Moreover, the dimensions that comprise the most important causes of high organizational

performance are digitalization strategy, followed by system connectivity, and strategic leadership.

Accordingly, being a LO is an “organizational imperative” (Watkins & Kim, 2018). It is not limited to training programs. Instead, it is about the environment that facilitates learning through multiple dimensions across the individual, team, organizational, and societal levels.

## **6.2 Limitations**

The study has three key limitations. First, the questionnaire respondent must be aware of the organization's internal environment to answer the questions fully and fairly. Accordingly, only top and middle management positions in the public sector were targeted as respondents. Second, participation was voluntary, so only the managers who agreed to contribute to the study were interviewed. Finally, the data collection was conducted at the end of 2020. This year coincided with the coronavirus pandemic spread, which actually affected measuring the organizational performance during the analysis.

## **6.3 Recommendations**

The study results are unique for the public sector and are much related to this sector's characteristics and cultural differences. Therefore, the study has some valuable implications for scientific research in the same field, as well as for policymaking, decision-making, and other HRM practices in the governmental organizations in Bahrain and similar sectors in GCC and the region.

This study recommends that **researchers** intensify their research into governmental LO in a careful way, so that the LO concept does not lose its meaning and usefulness, which the father of the LO envisioned. The

researchers are encouraged to reinforce their study models and instruments with digitalization elements as much as possible during research design, in order to support the business world with the impact of modern LO. In the field of strategic management and organizational behavior, the researchers need to think about linking the LO dimensions to the organization's behavior in the case of a crisis or disaster.

In terms of **policymakers**, they are encouraged to keep the LO concept and dimensions in mind as a proactive strategy when setting policies. In the public sector, policymakers need to think about digitalization as a main dimension of building and maintaining a governmental LO. They are also recommended to employ a digitalization strategy to facilitate achieving multiple governmental goals, including serving the citizens and the residents, successfully managing crises, and accomplishing the international SDGs.

Regarding **decision-takers**, they are recommended to practice the significant LO dimensions and incorporate these dimensions in their daily work. They are encouraged to improve the learning environment and reinforce learning within their organizations, to be prepared for any change and challenges. They should not underestimate their role in keeping their organizations robust under normal or crisis circumstances. In fact, leaders must be role models in gaining and sharing knowledge and supporting others in reinforcing learning.

Finally, **HRM practitioners** are suggested to incorporate the DLOQ in the performance management system as an evaluation tool. They may also use digitalized methods for measuring performance. Since both leadership and inquiry and dialogue currently have some negative impact on the governmental organizational performance, possibly because of the leadership behavior, thus the leaders and managerial positions' training and

development must emphasize leadership skills, coaching and mentoring others, system thinking, how to support learning, and how to manage and benefit from diversity in the organization.

## **6.4 Further Research**

The study limitations suggest some research opportunities. For example, instead of focusing on the top and middle management, intensive case studies on the public institutions that practice some of the LO dimensions are suggested. An ideal study may include respondents from the managerial and non-managerial staff in an institution, in addition to the clients. Another example is investigating how a LO may behave before, during, and after a crisis such as the coronavirus pandemic.

Moreover, future research may take some new directions. In light of this study findings, it would be helpful to focus on the strategic leadership and inquiry and dialogue dimensions' impact on organizational performance in the public sector to understand how to utilize them in improving performance. On the other hand, it is highly recommended to conduct a comparative study between the traditional learning environment and the digitalized learning environment and their impact on organizational performance.

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## Appendices

## Appendix A: Paper Version Questionnaire

University of Bahrain  
College of Business Administration  
MBA Program



جامعة البحرين  
كلية إدارة الأعمال  
الماجستير في إدارة الأعمال

### Learning Organization Dimensions and Its Impact on Organizational Performance: An Empirical Study in Bahrain Public Sector\*

**Dear Sir / Madam  
Greetings**

One of the Master of Business Administration Degree (MBA) requirements in the field of Management, by College of Business Administration at the University of Bahrain in the Kingdom of Bahrain, is to carry out research work in the related field areas. Therefore, I am performing a field study entitled “Learning Organization Dimensions and Its Impact on Organizational Performance: An Empirical Study in Bahrain Public Sector”, under Prof Adel Ismail Al-Alawi's supervision, Professor of Management & Information Systems.

The research contains a field survey that will be filled by Governmental Employees. The survey questions were constructed to serve the research objectives by assessing the current learning organization in the public sector.

The gathered data and information from this questionnaire will represent one of the main sources for my research work and its findings. For that reason, your kind response is highly appreciated. Furthermore, I would like to assure you that the data and information given in this questionnaire will be treated with the most confidentiality, and it will be used for only statistical purposes and scientific research.

Finally, I would be so grateful to you if you could spare some of your valuable time participating in this survey. And I thank you very much for your assistance and supporting the scientific research and researchers. Please feel free to contact me for any clarification or inquiry.

Best Regards,  
Student Name: Zain Alshomali  
Mobile No: 39762646  
E-mail: [zain.alshomeli@customs.gov.bh](mailto:zain.alshomeli@customs.gov.bh)

\* Learning Organization (LO) is defined as the organization that facilitates the learning of all its members and continuously transforms itself.

## **Section One:** Personal and Demographic Questions.

Please answer these questions, by selecting (✓) only one choice among the options.

1- Gender:

- ☐ Male<sup>1</sup>  
☐ Female <sup>2</sup>

2- Highest Degree Obtained:

- ☐ High School <sup>1</sup>  
☐ Diploma <sup>2</sup>  
☐ Bachelor's Degree <sup>3</sup>  
☐ Master Degree <sup>4</sup>  
☐ Ph.D. <sup>5</sup>  
☐ Others (Please Specify) <sup>6</sup>  
.....

3- Occupation category:

- ☐ Top Management (Managers, General Managers & other top managerial positions)<sup>1</sup>  
☐ Middle Management (Head of Unit, Head of Section & other middle management managerial positions) <sup>2</sup>  
☐ Other (Please Specify) <sup>3</sup>  
.....

4- Years of work experience:

- ☐ Less than one year <sup>1</sup>  
☐ 1 to less than 5 years <sup>2</sup>  
☐ 5 to less than 10 years <sup>3</sup>  
☐ 10 to less than 15 years <sup>4</sup>  
☐ 15 years and more <sup>5</sup>

## **Section Two:** Organizational Performance

Please indicate the degree of agreement with the following statements, by ticking (✓) only one choice in the scale to each statement.

|                          |   |   |   |   |   |                       |  |
|--------------------------|---|---|---|---|---|-----------------------|--|
| <b>Strongly Disagree</b> |   |   |   |   |   | <b>Strongly Agree</b> |  |
| 1                        | 2 | 3 | 4 | 5 | 6 |                       |  |

| Statement                                                                                                                           | Degree of Agreement |   |   |   |   |   |  |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------|---|---|---|---|---|--|
|                                                                                                                                     | 1                   | 2 | 3 | 4 | 5 | 6 |  |
| 1. In my organization, the response time for customer complaints is better than last year.                                          |                     |   |   |   |   |   |  |
| 2. In my organization, the average productivity per employee is greater than last year.                                             |                     |   |   |   |   |   |  |
| 3. In my organization, customer satisfaction is greater than last year.                                                             |                     |   |   |   |   |   |  |
| 4. In my organization, the number of new products or services is greater than last year                                             |                     |   |   |   |   |   |  |
| 5. In my organization, the percentage of total spending devoted to technology and information processing is greater than last year. |                     |   |   |   |   |   |  |
| 6. In my organization, the percentage of individuals enrolled in training and development programs is greater than last year.       |                     |   |   |   |   |   |  |

## **Section Three:** Learning Organization Dimensions

Please indicate the degree of agreement with the following statements by ticking (✓) only one choice in the scale to each statement.

|                          |   |   |   |   |   |                       |  |
|--------------------------|---|---|---|---|---|-----------------------|--|
| <b>Strongly Disagree</b> |   |   |   |   |   | <b>Strongly Agree</b> |  |
| 1                        | 2 | 3 | 4 | 5 | 6 |                       |  |

| Statement                                                                                   | Degree of Agreement |   |   |   |   |   |  |
|---------------------------------------------------------------------------------------------|---------------------|---|---|---|---|---|--|
|                                                                                             | 1                   | 2 | 3 | 4 | 5 | 6 |  |
| 7. In my organization, people help each other learn.                                        |                     |   |   |   |   |   |  |
| 8. In my organization, people are given time to support learning.                           |                     |   |   |   |   |   |  |
| 9. In my organization, people are rewarded for learning.                                    |                     |   |   |   |   |   |  |
| 10. In my organization, people give open and honest feedback to each other.                 |                     |   |   |   |   |   |  |
| 11. In my organization, whenever people state their views, they also ask what others think. |                     |   |   |   |   |   |  |
| 12. In my organization, people spend time building trust with each other.                   |                     |   |   |   |   |   |  |

| Statement                                                                                                             | Degree of Agreement |   |   |   |   |   |  |
|-----------------------------------------------------------------------------------------------------------------------|---------------------|---|---|---|---|---|--|
|                                                                                                                       | 1                   | 2 | 3 | 4 | 5 | 6 |  |
| 13. In my organization, teams/groups have the freedom to adapt their goals as needed.                                 |                     |   |   |   |   |   |  |
| 14. In my organization, teams/groups revise their thinking as a result of group discussions or information collected. |                     |   |   |   |   |   |  |
| 15. In my organization, teams/groups are confident that the organization will act as their recommendations.           |                     |   |   |   |   |   |  |
| 16. My organization creates systems to measure gaps between current and expected performance.                         |                     |   |   |   |   |   |  |
| 17. My organization makes its lessons learned available to all employees.                                             |                     |   |   |   |   |   |  |
| 18. My organization measures the results of the time and resources spent on training.                                 |                     |   |   |   |   |   |  |
| 19. My organization recognizes people for taking initiatives.                                                         |                     |   |   |   |   |   |  |
| 20. My organization gives people control over the resources they need to accomplish their work.                       |                     |   |   |   |   |   |  |
| 21. My organization supports employees who take calculated risks.                                                     |                     |   |   |   |   |   |  |
| 22. My organization encourages people to think from a global perspective.                                             |                     |   |   |   |   |   |  |
| 23. My organization works together with the outside community to meet mutual needs.                                   |                     |   |   |   |   |   |  |
| 24. My organization encourages people to get answers from across the organization when solving problems.              |                     |   |   |   |   |   |  |
| 25. In my organization, leaders mentor and coach those they lead.                                                     |                     |   |   |   |   |   |  |
| 26. In my organization, leaders continually look for opportunities to learn.                                          |                     |   |   |   |   |   |  |
| 27. In my organization, leaders ensure that the organization's actions are consistent with their values.              |                     |   |   |   |   |   |  |
| 28. My organization utilizes digitalized data in developing products or providing services for customers.             |                     |   |   |   |   |   |  |
| 29. My organization integrates digital channels or technologies to communicate products and services to its users.    |                     |   |   |   |   |   |  |
| 30. My organization automates the routine processes through recent digital applications.                              |                     |   |   |   |   |   |  |

**Your remarks are appreciated:**

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**Thank you for your cooperation**

## Appendix B: Electronic Questionnaire



**KINGDOM OF BAHRAIN**  
University of Bahrain  
College of Business Administration  
MBA Program

**مملكة البحرين**  
جامعة البحرين  
كلية إدارة الأعمال  
الماجستير في إدارة الأعمال

Zain Alshamali - L.O. Questionnaire

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### Learning Organization Dimensions and Its Impact on Organizational Performance: An Empirical Study in Bahrain Public Sector

Dear Sir / Madam  
Greetings

One of the Master of Business Administration Degree (MBA) requirements in the field of Management, by College of Business Administration at the University of Bahrain in the Kingdom of Bahrain, is to carry out research work in the related field areas. Therefore, I am performing a field study entitled "Learning Organization Dimensions and Its Impact on Organizational Performance: An Empirical Study in Bahrain Public Sector", under the supervision of Prof Adel Ismail Al-Alawi, Professor of Management & Information Systems.

The research contains a field survey that will be filled by Governmental Employees. The survey questions were constructed to serve the research objectives by assessing the current learning organization in the public sector. The gathered data and information from this questionnaire will represent one of the main sources for my research work and its findings. For that reason, your kind response is highly appreciated. Furthermore, I would like to assure you that the data and information given in this questionnaire will be treated with most confidentiality, and it will be used for only statistical purposes and scientific research.

Finally, I would be so grateful to you if you could spare some of your valuable time



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الماجستير في إدارة الأعمال

Zain Alshamali - L.O. Questionnaire

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### أبعاد المنظمة المتعلمة وأثرها على الأداء المؤسسي: دراسة تجريبية على القطاع العام البحريني

السادة والسيدات الأفاضل  
تحية طيبة،

من ضمن متطلبات الحصول على درجة الماجستير في مجال إدارة الأعمال بكلية إدارة الأعمال بجامعة البحرين أن يقوم الباحث بإعداد دراسة عن أحد المواضيع ذات الأهمية في ميدان دراسته. وفي هذا الصدد، فإنني أجري دراسة ميدانية بعنوان "أبعاد المنظمة المتعلمة وأثرها على الأداء المؤسسي: دراسة تجريبية على القطاع العام البحريني"، تحت إشراف الأستاذ الدكتور عادل إسماعيل العلوي.

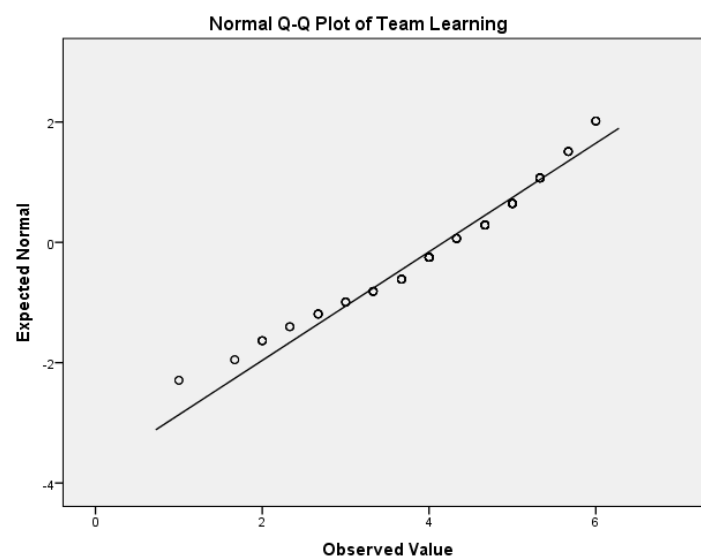
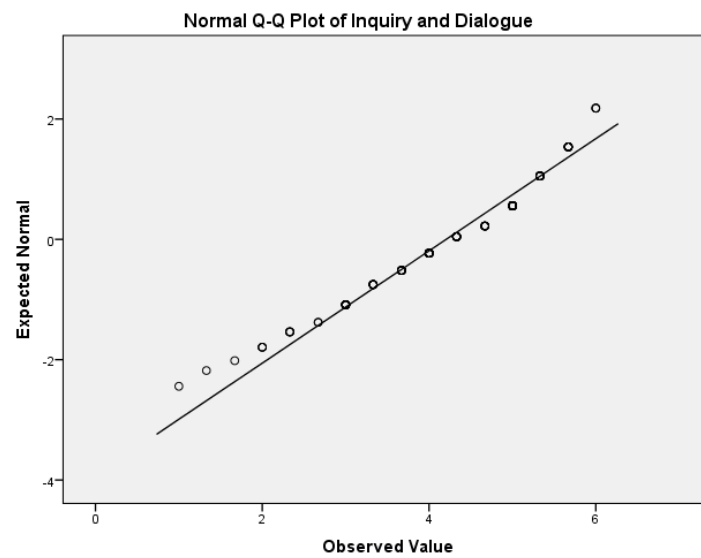
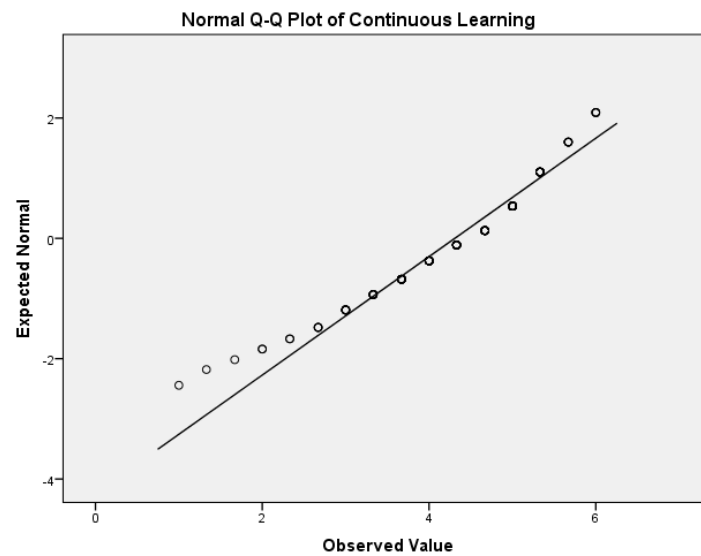
يشمل هذا البحث الميداني إستبياناً يتم توزيعه على موظفين الجهاز الحكومي في مملكة البحرين، حيث تم وضع أسئلة الإستبيان لغرض الوقوف على أثر أبعاد منظمة التعلم على الأداء المؤسسي في الجهاز الحكومي.

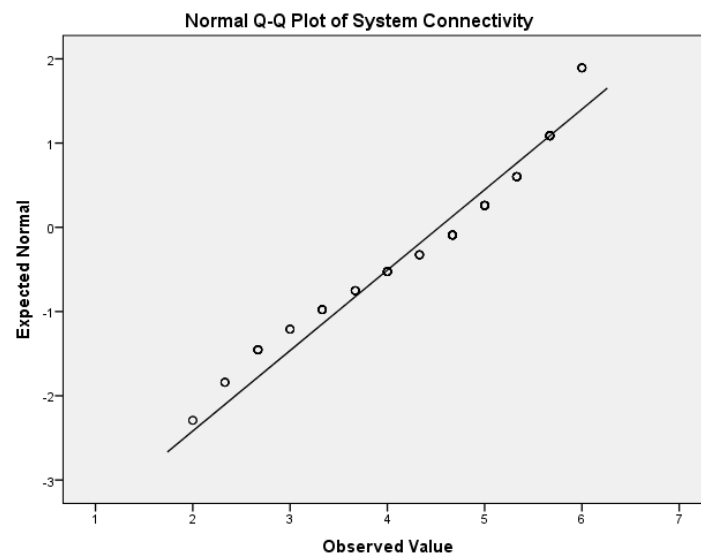
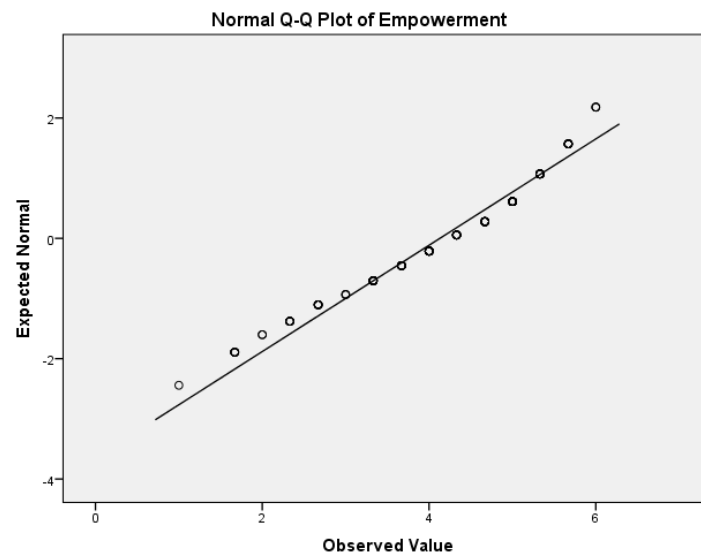
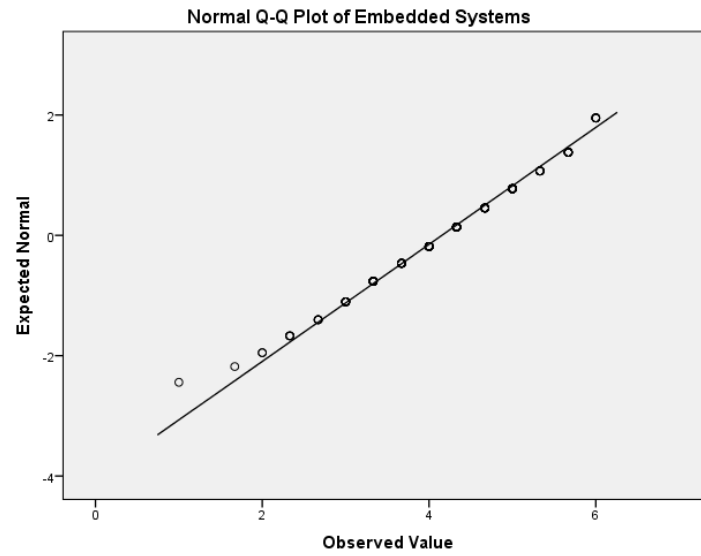
سعتل البيانات والمعلومات التي سيتم تجميعها من الإستبيان أحد المصادر الأساسية لبحث رسالة الماجستير. وعلى ضوءها يتم عمل التحليل العلمي والمنهجي واستنباط النتائج. لذا، فإن تجاوبكم الكريم مع هذا البحث بالإجابة على أسئلة الإستبيان بدقة سيكون له أكبر الأثر في إجاح هذا البحث، وسأكون ممتناً لكم لتعاونكم. وأرد أن أؤكد لكم أن جميع المعلومات والبيانات المقدمة من فيلكم سيكون لها صفة السرية المطلقة، وأن أجوبتكم ستسجل فقط بشكل معلومات إحصائية مجمعة وسوف تستخدم لأغراض البحث العلمي فقط ولن يتم تداولها أو نشرها.

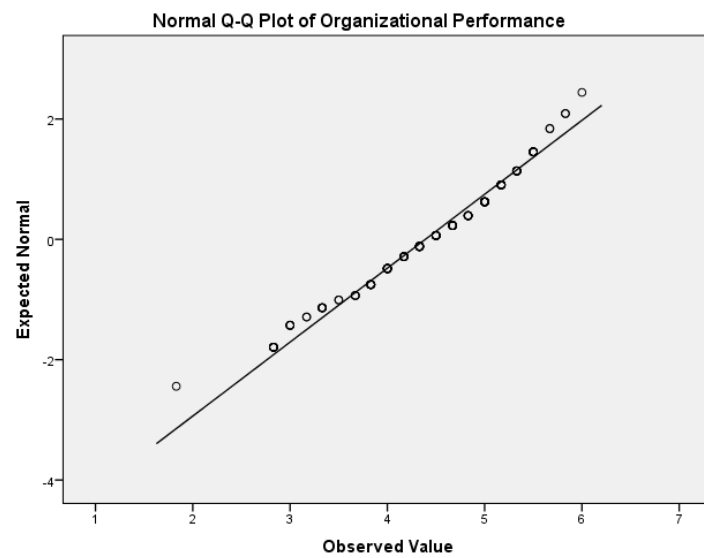
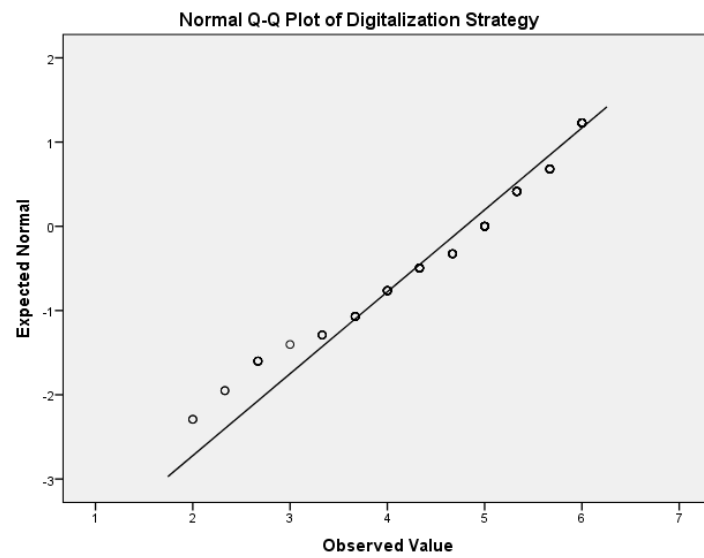
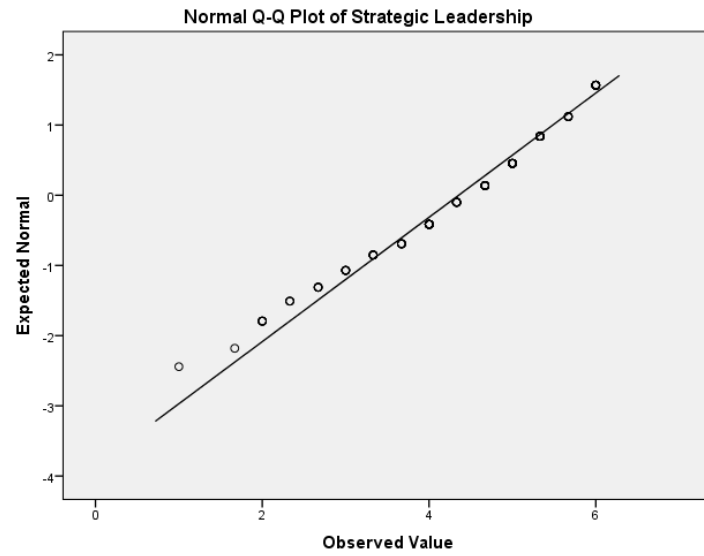
وأخيراً، ومع تقديري الثام لمدى انشغالكم، فإنني أطمح في وضع دقائق من وقتكم الثمين للمشاركة في هذا المسح الميداني. كما أشكركم جزيل الشكر على حسن تعاونكم ومسانق اهتمامكم بالبحث العلمي والباحثين.

مع تحيات  
اسم الطالبة: زين الشمالي

## Appendix C: Q-Q Plot







## شكر وعرفان

أتقدم بالشكر الجزيل والعرفان الخالص إلى المشرف على هذه الدراسة الأستاذ الدكتور عادل اسماعيل العلوي لجهوده وتوجيهاته القيمة التي أظهرت الدراسة بالشكل الذي بين أيديكم، جزاه الله عنا خير الجزاء.

كما أشكر أعضاء الهيئة الأكاديمية في كلية إدارة الأعمال على ما قدموه من الدعم والنصيحة، ومساهماتهم القيمة في الدراسة.

هذا وأتقدم بالشكر الجزيل لكل من استقطع من وقته وشارك في الدراسة وجمع المعلومات من الوزارات والهيئات الحكومية في مملكة البحرين، التي كان لها عظيم الأثر في إثراء الدراسة.

## الإهداء

إلى من حمّلي وتحمل بي والدتي ووالدي حفظهما الله،  
وإلى أخي وأخواتي الغاليات،  
إلى من رافقني مسيرة دراستي منى أعز الصديقات،  
وكل من دعمني وشجعني رغم كل الصعوبات،  
وإلى كل من تزوّدت بعلمه وحُلّقته على مر السنوات،  
إلى هؤلاء جميعاً، أهدي هذا النتاج المتواضع، لعلّه يكون لبنة نافعة من  
لبنات العلم، أو شمعة مضيئة على طريق المعرفة.

## الباحثة

## الملخص

**الغرض -** خضع موضوع المنظمات المتعلمة للدراسة والمناقشة لعقود من الزمن إلا أن القليل من الدراسات تطرقت إلى المنظمة المتعلمة في القطاع العام، لذا تهدف هذه الدراسة لاستكشاف إمكانية تطبيق منظمة متعلمة حكومية في البحرين، والتعرف على العلاقة بين أبعاد المنظمة المتعلمة والأداء المؤسسي.

**المنهجية -** تم تطبيق دراسة تجريبية لجمع البيانات من 136 ممثل من القطاع العام وفقاً لأسلوب العينة العنقودية. يتكون نموذج البحث من ثمانية متغيرات مستقلة تمثل أبعاد المنظمة المتعلمة: التعلم المستمر، الاستفسار والحوار، التعلم الجماعي، الأنظمة المضمنة، التمكين، اتصال النظام، القيادة الإستراتيجية، واستراتيجية الرقمنة. وعليه فقد كان استبيان أبعاد المنظمة المتعلمة هو أداة الدراسة المستخدمة، والتي تقيس تصور المستجيبين تجاه أبعاد المنظمة المتعلمة في مقياس ليكرت المكون من ست نقاط. وقد تم تحليل البيانات بشكل أساسي بواسطة IBM SPSS Statistics (الإصدار 22) لاستخراج نتائج الدراسة.

**النتائج -** تكشف الدراسة عن العلاقة المهمة بين الأداء المؤسسي في القطاع العام وأغلب أبعاد المنظمة المتعلمة، بما في ذلك التعلم المستمر، والاستفسار والحوار، والتعلم الجماعي، والتمكين، اتصال النظام، والقيادة الاستراتيجية، واستراتيجية الرقمنة. مما يعني قابلية تطبيق المنظمة المتعلمة في القطاع العام البحريني. علاوة على ذلك، فإن الأبعاد التي تشكل أهم أسباب الأداء التنظيمي العالي هي استراتيجية الرقمنة، اتصال النظام، والقيادة الاستراتيجية.

**قيود الدراسة -** يجب أن يكون الأفراد المستجيبين للاستبيان على دراية بالبيئة الداخلية للمنظمة، من أجل الإجابة على الأسئلة بشكل كامل وعادل، وبالتالي فإن النتائج تمثل فقط تصوّر الإدارة العليا والوسطى في القطاع العام، الأمر الذي يشكل أهم أوجه القصور في الدراسة.

**القيمة البحثية -** تسهم نتائج الدراسة في إثراء مجال التطوير التنظيمي بشكل عام والقطاع العام بشكل خاص. حيث ترتبط النتائج إلى حد كبير بخصائص القطاع العام واختلافاته الثقافية. وعليه، فإن للدراسة العديد من الآثار القيّمة على البحث العلمي في نفس المجال، بالإضافة إلى صنع السياسات واتخاذ القرارات وممارسات إدارة الموارد البشرية في المؤسسات الحكومية في البحرين. بالإضافة إلى ذلك يمكن للمؤسسات المماثلة في دول مجلس التعاون الخليجي والمنطقة الاستفادة من نتائج هذه الدراسة. تتمثل أهم توصيات هذه الدراسة في اعتماد المنظمة المتعلمة كاستراتيجية استباقية في القطاع العام، واعتبار الرقمنة بعداً أساسياً للحفاظ على منظمة متعلمة حكومية.

**الكلمات المفتاحية:** المنظمة المتعلمة، استبيان أبعاد المنظمة المتعلمة، إدارة المعرفة، إدارة الموارد البشرية، القطاع العام، الحكومة، البحرين، الرقمنة، التعلم المستمر، الاستفسار والحوار، التعلم الجماعي، الأنظمة المضمنة، التمكين، اتصال النظام، القيادة الإستراتيجية



## أبعاد المنظمة المتعلمة وأثرها على الأداء المؤسسي: دراسة تجريبية على القطاع العام البحريني

رسالة مقدمة كجزء من متطلبات الحصول على درجة الماجستير في إدارة الأعمال

اعداد:

زين عبدالله الشوملي

الرقم الجامعي: 20023055

إشراف:

الأستاذ الدكتور عادل اسماعيل العلوي

جامعة البحرين

مملكة البحرين

مايو 2021

