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Thesis Title:

Awareness and drivers of creativity and innovation in public sector organization: an empirical investigation from the both public and private employees.

**A Thesis Submitted in Partial Fulfilment of the Requirements for
the Degree of Master of Business Administration**

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Dedication

For their continuous assistance and encouragement, I extend my sincere thanks to my dear father, my wife, my children, my brothers, my sister, and my thesis study supervisors.

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Abstract

- **Purpose:** The study aims to measure the existence, awareness and impact of six proposed drivers on highlighting creativity and innovation to develop employee's performance in public and private sector organizations in Bahrain, namely experimentation, feedback, motivation, learning, responding to low performers, and budget constraints. The study provides sufficient information to give a clear picture of most important topics of creativity and innovation.
- **Design/ Methodology/ approach:** A primary quantitative approach is used to collect data through a survey questionnaire. Probability sampling by using the convenient sampling technique. The target population for this study mainly consists of employees at all levels (managers, department heads, and employees) working in the public and private organizations in Bahrain.
- **Results:** The results indicate that all of these drivers have a significant positive impact on highlighting the creativity and innovation on developing employee's performance. Experimentation and motivation have the greatest impact, and the least impact was the budget constraints. This study shows that there is a high degree of awareness of creativity and innovation drivers in all organizations. There is a great convergence between the existence, impact and awareness of creativity and innovation drivers among public and private sector employees in Bahrain. Concentrating on employees rather than management and the organization might lead to greater innovation returns.
- **Research limitations/ implications:** This study is limited to accurately clarifying the impact of creativity and innovation motivators on developing employee performance due to the large size of the selected population and the multiple categories of drivers for employees, managers, or the organizations. To

stimulate creativity and innovation in public and private sectors, it necessary to focus on employee drivers such as experience, motivation, and learning, because they have a significant impact on the occurrence of creative and innovative activities.

- **Practical implications:** It was found that employees' awareness of the drivers for creativity and innovation has a clear role in spreading them in the organization. Also, experimentation and motivation are the drivers that have the highest impact on the occurrence of creative and innovative activities in public and private sector.
- **Originality/value:** This study attempts to propose a formula for the most prominent drivers affecting creativity and innovation in developing employee performance in Bahraini public and private organizations. Having a final formula of these drivers would be a great addition to public sector organizations, especially when compared to the private sector.
- **Recommendation:** Preparing future studies that focus on involving employees in implementing creativity and innovation drivers because employees are the basis of the innovative process for developing performance in organization. Working with employees to find other factors that stimulate creativity and innovation, such as creating awareness and a culture of creativity among employees, placing them in an environment that encourages creativity, and involving them in various innovative competitions.
- **Keywords:** creativity and innovation, drivers, employee performance, awareness, impact, public and private sector.

Chapter one: Introduction

1.1. Overview

At the outset, creativity and innovation are considered the main engines of growth in the long term (Banerjee & Thakurta, 2013). Creativity and innovation in any organization are vital to its successful performance. The importance of the study is evident in trying to develop a studied methodology to enable public sector organizations to adopt creativity and innovation by highlighting the impact of the drivers they establish in enabling the organizational structure that supports innovation and development, to create excellence and ensure continuity and survival. When mentioning the context of a prominent topic such as creativity and innovation, many sub-topics will appear around it, as all of them are very important to create a clear picture of how to implement innovation or creativity in the ideal way. There are sub-topics in some studies that talk about its impact, activities, methods, barriers, results, and others. In this study, the existence and impact of drivers that highlight the creativity and innovation in the public sector will be discussed, and they will be compared with private sector employees.

This study will be on public sector employees by knowing the average availability (existence) and making change (impacts) of creativity and innovation drivers in their institutions and the level of understanding (awareness) of them, which will give a comprehensive perception of what is the real situation of public sector employees towards creativity and innovation drivers in Bahrain. It is important to know what employees need or what should they do to get them to the level required to bring about a valuable change that will bring the public sector to the peak of prosperity? This study is concerned only with knowledge of the disease

or the general diagnosis of creativity and innovation drivers in the public sector, such as what the doctor diagnoses the patient's condition. Making a change after knowing the state of the public sector is considered as giving the appropriate medicine to the patient after knowing his health condition, and this will not be one of the contents of this study, but this matter is important and necessary to do in future studies. In this study, more focus is placed on public sector employees, while the private sector employees are present because of the comparison work only and knowing the realistic level between them.

This study aims to explore the impact degree of drivers that generate creativity and innovation and consider them as influencing factors in the development process in some Bahraini public sector organizations. These six proposed drivers are the way to achieve creativity and innovation, and they are the important causes that help the emergence of the bright sides in an organization. The study suggests some critical factors that influence the creativity and innovation (as a dependent variable). These factors are experimentation; feedback; motivation; learning; responding to low performers and budget constraints (as independent variables) have an impact on creativity and innovation in the public sector in Bahrain. Before measuring the impact of these drivers, it is necessary to know whether these drivers exist and are applied in the institutions or not, and then I measure the impact, because how do I measure something that does not exist?

This study will test these factors because they have been tested in previous studies in other countries. Most of these factors were active and successful and had effects in highlighting creativity and innovation in their organizations. I want to re-test these factors again, but in the Kingdom of Bahrain, and they may succeed in achieving their goals.

First of all, due to the public sector's decline in innovation compared to the private sector, perhaps there is a lack of data on innovative and creative drivers in global public sector organizations, especially in Bahrain (Al-Noaimi, 2019). Also, there is a belief that there is a lack of awareness among some employees of these drivers. This explains the lack of awareness that there are not many studies in this regard. Thus, the awareness will be tested in this study. While this topic is still in the process of extensive study and attracts many interested researchers due to its importance and impact on the work of organizations, where current studies refer to various factors to examine their impact on creativity and innovation, other studies are trying to find a final formula for the influencing factors. This study will be one of the rare studies in this context. Additionally, it will identify many factors that are believed to directly affect the measurement of the creativity and innovation in some Bahraini public sector organizations.

This study will provide adequate conceptual information about creativity and innovation in preparation for a good clarification of the subject by making use of many sources on this context. This study will be supported by some comparisons that clarify the creativity and innovation in the public sector and private sector. Also, private sector employees will be welcome to participate simply in this study and will contribute to clarifying the comparison between the existence and impact of creativity and innovation drivers in the public and private sectors. This research aims to identify the drivers that have a direct and indirect impact on creativity and innovation in the public sector in Bahrain. The reason for making this comparison in this study is that when mentioning the percentage of existence, influence, or awareness of creativity and innovation drivers in the public sector, it has no value if no percentage of another party or competitor is mentioned.

The main purpose of this research is to investigate the factors related to increasing the impact of creativity and innovation in Bahraini public sector organizations. After knowing what are the most important factors in creating creativity and innovation, it will be recommended to increase the implementation of these drivers to spread creativity and innovation among Bahraini organizations. The literature shows several gaps that both senior management and employees responsible for the development movement in the organization must consider and be close to build a successful project. These gaps indicate three criteria. These criteria are: existence, impact and employee awareness of creativity and innovation drivers. These drivers are further clarified in the explanation of research factors in literature review (Chapter Two). Appearance 1.1 illustrates the research gap.

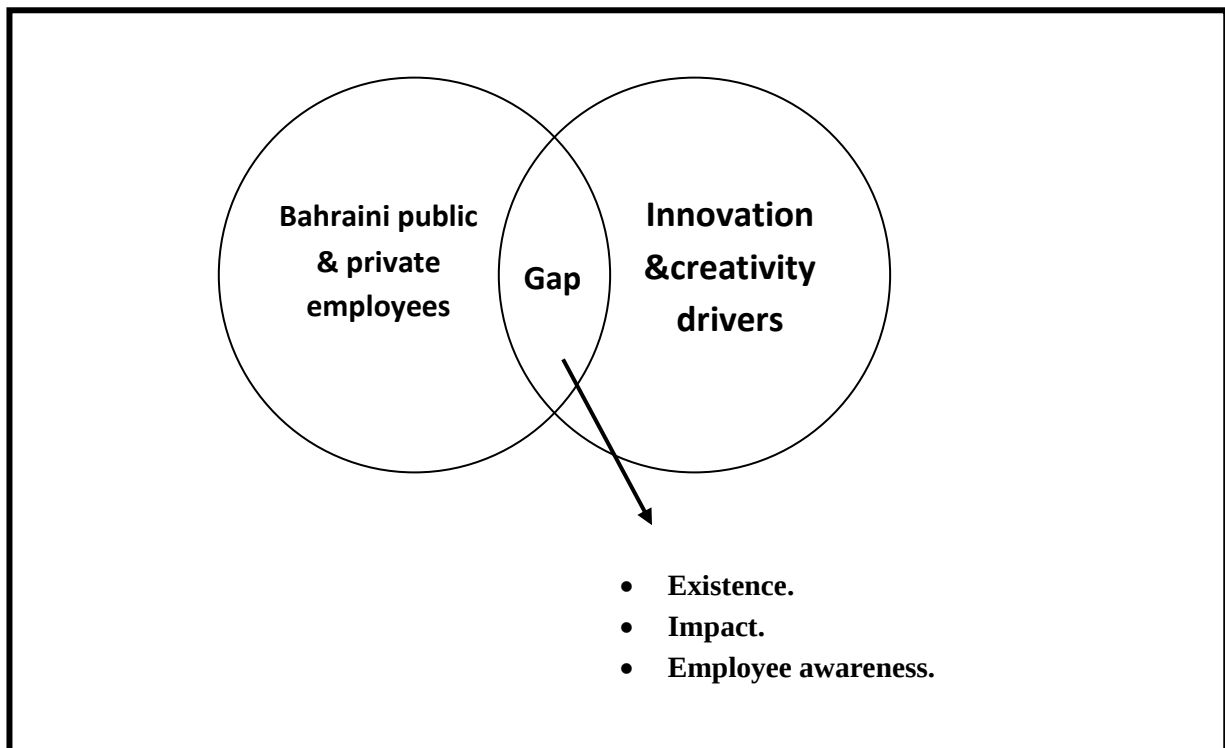


Figure 1.1. *Research Gap*

1.2.Research problem:

Diverse people from different sectors, like business managers, policymakers, and public administrators, have grown increasingly interested in the concept of creativity and innovation (Damanpour et al., 2009). Despite studies done in this field, there is an important question of why the tendency to innovate differs among organizations, notably concentrated in the private sector, whereas the public sector is mostly ignored (Osborne and Brown, 2013). Public sector innovations in general are always seen through the prism of private sector frameworks (Bloch, 2016). This lack of study is regrettable because there is a wealth of empirical examples and cases indicating that public sector innovation could have a significant impact (Geels, 2002; Geels and Schot, 2007; Kuhlmann and Rip, 2014; Turnheim and Geels, 2013). However, the tools and strategies for including individuals in public sector innovation are still immature (Bekkers et al., 2013).

To make matters worse, a recent systematic assessment of research on innovation in the public sector came to the conclusion that the literature did not adhere to current organizational theories and had not a "clear theoretical underpinning" (de Vries et al. 2016). Similarly, research on public sector innovation has so far produced relatively little, according to Demircioglu (2017). According to de Vries et al. (2016), researchers have urged for research that connects current ideas about the drivers of innovation with new theories that explore innovation in public sector organizations. There is still a lack of an adequate framework for understanding and measuring innovation in the public sector (Koch & Hauknes, 2005). The paucity of research on innovation in the public sector is often attributed to its relative lack of innovation, as it is inherently less innovative than the private sector (Albury, 2005). Bahrain struggles to deal

with performance in most of its public sector mainly due to failure to address issues such as the relationship between organizational performance, organizational resources, creativity and quality management of internal and external environments (Al-Noaimi, 2019). Thus, in general, there is a lack of data on innovation and creativity in public organizations, and this study seeks to contribute to fill this gap.

However, the awareness of innovation in the context of the public sector is underdeveloped (e.g., Potts and Kastle 2010; Osborne and Brown 2011; Sørensen and Torfing 2011; Gonzalez et al. 2013; Torfing and Triantafyllou 2016). This research will serve as a reliable empirical database in this field. Because of this lack of information, there may be a lack of awareness of the creativity and innovation drivers of public sector employees, and this study will measure the level of awareness of these drivers among public sector employees. Also, there is no final formula for influencing drivers that create creativity and innovation, which is considered a research problem that will be attempted to be solved in this study.

1.3. Research objectives:

1. Measure the awareness level of Bahraini public sector employees about the drivers of creativity and innovation on developing employee's performance in their organizations.
2. Measure the level of impact of creativity and innovation drivers on developing employee's performance in Bahraini public sector organizations.
3. Provide a comparison between Bahraini public and private sector employees in the field of measuring the level of impact of creative and innovative drivers on developing employee's performance and their level of awareness of these drivers in their organizations.

1.4. Research questions:

To accomplish the research's aims and objectives, many questions will need to be addressed. The vast majority of public sector organizations carry out the processes of creativity and innovation because of their great importance in the development of organizations and reaching the desired goals in the best possible way. However, the following are the research questions:

1. What is the awareness level of some of Bahrain's public sector employees toward the drivers of creativity and innovation on developing employee's performance?
2. What are the factors that have a significant positive impact on creativity and innovation in Bahrain's public sector organizations?
3. What are the differences between the public and private employees in measuring the impact and awareness of creativity and innovation drivers?

1.5. Significance of the Research:

Innovation is a generally acknowledged concept in today's world (Trott, 2017). Innovation can increase organizational performance (Damanpour et al. 2009), productivity (Arundel et al. 2015) and economic growth (Banerjee & Thakurta, 2013). In view of this great and increasing importance of creativity and innovation in the world today, I decided to conduct this study to measure the level reached by the institutions of the Kingdom of Bahrain in this specialty. The main reason for conducting this comparison between the public and private sectors is to know the status of public sector employees in terms of creativity and innovation and to compare it with the status of the private sector. Because what is the benefit

or value of giving a specific number for that without comparison, and that will give the clear picture and real situation of public sector employees after the comparison with private sector employees. In this study, knowledge of the drivers affecting the creation of creativity and innovation will attempt to be disclosed. In addition, the level of employee awareness of the creativity and innovation drivers in their organizations will be measured through survey questions.

1.6. Research Steps:

The research steps listed below are intended to meet the following objectives:

1. Formulation of the introduction and basic information about this research and everything related to the method of preparing and processing it
2. Reviewing the literature on creativity and innovation topics and concepts relevant to research objectives
3. Distribute the research survey to the desired respondents.
4. Collecting data to determine the relationship between experimentation, responding to low performers, feedback, motivation, learning, and budget constraints to clarify the creativity and innovation in Bahraini public sector organizations.
5. Analyzing and interpreting the quantitative data collected
6. Organizing and writing the results, conclusion and discussion, and recommendations for future research, as well as the abstract and appendices.

1.7. Thesis Structure:

The research is divided into the following four chapters:

1. The first chapter is an introduction. This chapter provides an overview and summary of the research on creativity and innovation, including the research problem, research questions, research primary objectives, and research significance. This chapter also discussed the research steps and limitations.
2. The second chapter is a theoretical background and literature review. This chapter covers the theoretical foundation with a literature review as well as prior studies connected to creativity and innovation drivers in the public sector. This chapter also proposes research hypotheses for related drivers in the public sector.
3. Research methodology is the third chapter. This chapter focuses on the methodology and discusses the procedures for performing the study, such as presenting the research problem and questions; collecting data; the empirical findings in data analysis; questionnaire validity and reliability; and population and sampling.
4. The results, conclusion, discussion, recommendations for future studies and practical implications are included in the fourth chapter. This chapter concludes the study by explaining the research, and making recommendations, and suggestions for further research in the field.

Finally, this study concludes by presenting the sources used in this research in the "References" section in addition to the appendices.

Chapter two: Literature Review

2.1. Introduction:

Organizations nowadays confront rapid change, which forces them to face unexpected difficulties and there is an obvious need to make creative or innovative changes. The creativity and innovation has become one of the most important factors that determine the extent of an organization's quality, but rather a determining factor for their consistency and survival, considering the fast development and level of competitiveness that define the labor market today (Anderson et al., 2014). The world is generally changing quickly as a result of technological advancements around us, and the numerous waves of creativity and innovation are accelerating as global organizations succeed at the expense of other organizations if the latter do not improve their operations based on innovation. This is particularly true in light of the development of cross-border service operations between countries, which also forces companies to change and adapt more quickly than ever before to keep pace with these changes. Furthermore, the change to creativity and innovation needs organizations that are continuously capable of evaluating and reorganizing their own capacities (Al-Watan, 2018).

This chapter will focus mainly on creativity and innovation in the public sector. In addition to giving a simple overview of some of the differences between the public and private sectors in innovative drivers, which will be found through previous studies. This chapter will provide some information necessary to clarify the basic concepts in this study. Now, I will review the creativity skill first because it is the beginning of innovation, as I will explain later. Therefore, the title of this study will begin with creativity and then innovation, according to their

arrangement in the development process. Then, I will show innovation and information related to it so that the subject is well understood and I will follow it with creativity and innovation drivers through previous studies.

2.2. Creativity:

2.2.1. Creativity definition:

Creativity has generally been defined as the generation of unique and useful ideas (Amabile, 1988). Creativity is "the process of generating a novel or useful idea" (Barringers, 2016). www.dictionary.com defines creativity as "the ability to transcend traditional ideas, rules, patterns, relationships, or the like and to create meaningful new ideas, forms, methods, interpretations, etc.; originality, progressiveness, or imagination".

In addition, creativity has been defined as the "mental and social process fueled by conscious or unconscious insight for generating ideas, concepts, and associations" (Serrat, 2017). Amabile et al. (2005) distinguished between creativity and innovation, saying that the generation of unique, useful ideas is creativity, while the effective application of those creative ideas inside an organization is innovation (Isaksen and Treffinger, 2004; Isaksen and Akkermans, 2011; Shalley and Gilson, 2004).

Organizations that encourage unconventional thinking are more creative. Often, the companies that fail are the large ones that restrict creativity with tough regulations and offer no opportunity for change. Some organizations build environments that motivate employees and retain innovative workspaces. Management can play a role in the creative process because creativity does not

occur exclusively and implicitly in a person's head but in interaction with a social context where it can be written down. Also, creativity comes from the womb of need, by looking at familiar things in an unfamiliar way. The current stage will not be skipped by using the same solutions that were tried before but did not succeed.

2.2.2. Creativity importance:

Despite the importance of creativity, most people do not have the ability to define and explain it theoretically, but they all know creativity when they see it, especially people who work and have experience and knowledge in the same field (Amabile et al., 1996). Creativity has always been at the center of human effort and plays an important role in the innovation process, and market-valued innovation is both a producer and a sustainer of performance and change (Serrat, 2017). Because creativity is becoming more and more important in the workplace, it has been extensively investigated (Ekvall and Ryhammar, 1999; Amabile et al., 1996; Amabile et al., 2005; Anderson et al., 2014; Zhou and Shalley, 2003). Tierney and Farmer (2011) clarified the importance of creative performance in improving overall organizational performance in an organization.

Without a doubt, the most valuable human resource is creativity, and stimulants and barriers to creativity promote or inhibit enterprise in organizations (Serrat, 2017). Edward de Bono said a kind word about creativity: "Without creativity, there would be no development, and we would be endlessly repeating the same patterns".

Creativity is essential to innovation, and it is impossible to move forward with innovation without creativity (Mathisen and Einarsen, 2004).

Creativity is currently acknowledged as critical to organizational performance, especially when combined with innovation, which generates unexpected value (Serrat, 2017). According to Amabile et al. (1996), creativity is the way to achieve innovation because it may change and enhance the individual's perspective of their organizational climate, which can affect the level of innovation behavior of employees in the organization (Scott and Bruce, 1994).

Although both creativity and innovation are necessary for effective workplace improvements, creative behavior involves the generation of new ideas, while innovative performance involves both the creation and implementation of new ideas (Hunter et al., 2007). This means that innovation may be a more general and comprehensive term than creativity because it includes both the generation and application of an idea.

Features connected to creative behavior in the public sector have become a major subject (Bason, 2010; Borins, 2002; Cole and Preston, 2006) because of their central role in raising "the responsiveness of services to local and individual needs, as well as to public needs and expectations" (Mulgan and Albury, 2003). Considering these environmental aspects, Potocnik and Anderson (2012) suggest that creative performance is necessary for organizational success and survival in the public sector (Choi and Chang, 2009; Imran et al., 2010). The overall success of an organization is seen as being associated with success in both organizational creativity and innovation (Isaksen & Akkermans, 2011; Sanders et al., 2010). As a result, employees regard the requirement for creative performance, represented as personal creativity and personal innovative behavior, as both an essential and desirable trait (Imran et al., 2010).

2.2.3. Creative ideas and opportunity:

It is important to identify the difference between an opportunity and an idea. According to Barringers (2015), that illustrates clearly the difference between an idea and an opportunity, where an idea is a "thought, an impression, or a notion". An idea may or may not meet the requirements of an opportunity. This is an important point since many entrepreneurial projects fail not because the entrepreneurs who started them did not work hard enough but because there was no true opportunity to begin with. Before becoming excited about a creative idea, it is critical to determine whether it fits a need and qualifies as an opportunity.

An opportunity is "a favorable set of circumstances that create a need for a new product, service, or business" (Barringers, 2015). In this case, an entrepreneur chooses to develop a business, looks for and realizes an opportunity, and then launches it, like Jeff Bezos did when he founded Amazon.com. Bezos left his prestigious job at a New York City investment firm in 1994 and moved to Seattle to find an attractive opportunity and start an e-commerce firm. According to the Arab International Economic Newspaper, Amazon achieved \$470 billion in revenues in 2021 and more than 33 billion in net profits, especially as it was one of the most profitable during the Corona pandemic period. Of course, Bezos receives double what he received from his previous job because he took advantage of the opportunity in the right way and at the right time. An entrepreneur sees an opportunity gap in the market and starts a business to address it. Opportunity has four essential characteristics (Barringers, 2015):

1. It is attractive.
2. It is durable.
3. It is suitable.

4. It is embedded in a product, service, or company that provides or adds value to the customer or end user.

An entrepreneur's window of opportunity must be open to gain from an opportunity. The term "window of opportunity" is a description of the period in which an organization may effectively enter a new market. A new product's window of opportunity opens once a market for it is formed. Organizations enter the market as it expands, hoping to establish a profitable position. The market eventually develops, and the window of opportunity closes. Of course, it may take a hundred creative ideas to discover the one that perfectly satisfies the opportunity.

For instance, Hey Ho! was the first internet search engine in 1995. When the internet search engine market expanded rapidly, numerous companies joined as rivals, including Google, which started in the market in 1998 and had to cut search technology. Since then, the market for search engines has grown, and the window of opportunity has narrowed. A fresh start-up search engine company today would have a very tough time succeeding unless it provided significant benefits over previously established competitors or expertly targeted a specialized market (Barringers, 2015).

Opportunity recognition might be a cognitive or natural ability. Some people think that business owners have a "sixth sense" that enables them to recognize opportunities that others pass over. Entrepreneurial alertness, often known as the sixth sense, is the capacity to notice things without actively seeking them out. Many entrepreneurs perceive themselves in this way and think of themselves as vigilant individuals. Since awareness is essentially an acquired ability, those who are more knowledgeable in a certain field are more likely to see opportunities in that field than those who are less knowledgeable. For instance, a

computer engineer will be more aware of the opportunities and demands in the computer business than a lawyer (Barringers, 2015).

Individual innovative behavior is believed to be undertaken first when new ideas are produced and, secondly, when the environment is suitable for implementing creative ideas (Scott and Bruce, 1994; Yuan and Woodman, 2010). Creative thinking cannot be switched on and off with the click of a button because it is a necessity for continued success in organizations, and creativity flourishes in organizations that support open ideas (Serrat, 2017).

Now, I will discuss where the creative idea originated so that innovation drivers can appear. Data on the source of creative ideas can be relied on and considered. Management plays a role in the creative process, but it is not managed; it is handled. Why? Because creativity does not occur solely and automatically in a person's head but rather in interaction with a social setting in which it can be recorded (Drucker, 1985). Usually, the origin of these ideas is through the personal efforts of the direct employees of the tasks to know all the details related to the task or through consulting firms (Fuglsang, 2010).

For an individual, the creative process can be divided into five stages (Barringers, 2016). The five steps to generating creative ideas are preparation, incubation, insight (illumination), evaluation, and elaboration (verification). Graham Wallas, a social psychologist and co-founder of the London School of Economics, first described these five stages in his 1926 book, *The Art of Thought*, which is a study of creativity. In this book, Wallas outlines the basic stages of the creative process. Now, I will review these five stages to generate creative ideas as follows (Barringers, 2016):

- 1. The preparation stage:** The first stage of the creative process is the preparation step, which includes idea generation. Collecting information and conducting a study may result in a creative idea. There are all possible ways to develop comprehension while brainstorming, making ideas wander, or writing in a notebook to encourage diverse thinking. The brain uses its memory store to make use of existing information and past experiences to come up with new ideas during the first stage of the process.
- 2. Incubation stage:** The goal of the incubation stage is to finish actively thinking about the ideas before moving on. Getting out of the brainstorming and all the thinking that was done before sitting down to put it into action is a necessary part of creative thinking. Apart from not actively attempting to work on the idea, it is possible to go on to another project or stop the creative process completely. Although abandoning the idea may seem unproductive, it's a crucial step in the process. All of the knowledge gathered for the new idea is still being formed by the subconscious mind during this time.
- 3. Insight stage:** also known as the illumination stage of the creative process. All the information obtained comes together to provide a solution to the problem. This is the moment when the creative solution or idea moves from the subconscious to the forefront of the mind.
- 4. The evaluation stage:** After the initial idea has been developed, this stage includes critically analyzing the new idea and comparing it against alternative solutions. The idea's viability and how it stacks up against the alternatives are taken into account at this stage. To determine whether the solution matches the original vision, it is also a good idea to reflect on the initial problem. Market research can be conducted by business professionals to determine whether an idea is feasible.

5. The elaboration stage: is the final stage of the creative process in which the idea is realized. The creative product has become ready for release. The design is finished, and the idea can be brought to life and presented to the world.

Brainstorming, focus groups, library and Internet research, creating an idea bank, establishing a focal point for ideas, and encouraging creativity at the organizational level are the most prominent techniques for generating ideas. Using the brainstorming technique, people can quickly come up with a lot of ideas and answers to problems. The session of brainstorming should be focused on a certain subject and usually involve a group of people. There are some ground rules for brainstorming sessions, including no criticism, encouragement of freewheeling, a quick pace, and promotion of leapfrogging.

A focus group is a collection of people (approximately 5 to 10 people) who have been chosen based on their shared traits with the topics under discussion. These discussions are facilitated by a skilled mediator who clearly describes the issue or problem, identifies the points to be discussed, and then starts a dialogue with the group to develop a solution or an appropriate way to deal with the situation. Focus groups have several uses, but one of them is for coming up with fresh company ideas. According to a library study, libraries are frequently an underused information source for coming up with fresh ideas. New ideas can emerge just from reading multiple journals or studies on a specific subject. When beginning a new internet search, entering "new ideas" into the search field will provide links to articles from newspapers and magazines that highlight the "most important" new ideas. Setting up Google Mail Alerts gives you access to a regular supply of news items, blog posts, and news releases on a certain subject. Targeted internet searches might be beneficial as well.

Some companies encourage, collect, and analyze ideas by choosing a special person to examine and track them—since if everyone's job is to examine and track them, it may not be anyone's obligation. Another technique is to establish an idea bank (or vault), which is a physical or digital repository for storing and using ideas whenever needed. Although creativity is commonly regarded as an individual trait, it may be supported or inhibited at the organizational level. The degree to which a company motivates and rewards creativity influences its workers' creative output (Barringers, 2015).

2.2.4. Creative people:

Abraham Maslow raises some questions about creativity, saying that the crucial question is not "What supports creativity?" but "Where has human potential been lost?" How was it hindered? As a result, we believe a good question may not be, "Why do humans create?" But why don't humans create and innovate? We must remove our sense of wonder in the face of creativity as if it were a surprise that anyone created anything at all (Serrat, 2017).

A creative person in this matter is the first in whom no one has preceded him. God Almighty said in the Holy Qur'an about himself: "The creator of the heavens and the earth"; that is, its creator from nothingness; then He is Glory be to Him, the Creator, the Inventor, not from a previous example (Ibn Manzur, 1290).

People who create and who innovate, by definition, have different characteristics and views. Creativity was once thought to be the domain of artists, scientists, and authors only. However, the creative impulse does not have to be restricted to any job or job description. The question here is, What is the origin of

creativity for the creative person? Is it through the capabilities and skills that this person possesses, or through the external factors surrounding him or her that surround him or her as an environment to which he or she belongs, that motivate him or her to be creative? Shamsan Al-Mannai answered this question in his doctoral dissertation from the University of Bath in Britain, where he said that studies on creativity were divided into two main directions. But the obvious and indispensable fact is that creativity does not thrive without a suitable environment (Al-Mannai, 2005). Creative activity is the product of the presence of personal abilities and the existence of the social and cultural environment that surrounds the creator (Sternberg, 1988).

Creative people come in a range of typologies; they might be fast and dramatic or cautious and calm. It is also true that most new ideas do not arise from a spark of inspiration in the minds of creative people but rather from how people recognize, create, collect, transmit, and use knowledge. The individuals and groups most likely to respond to creativity possess three things: first, the knowledge and skills about the field in which they work; second, the techniques used to encourage access to creativity; and third, the real motivation for creativity (Amabile, 1996). Most of the studies on the social and cultural aspects of creativity that were conducted in the Arab environment shed light on the role of the family and upbringing in the growth of the person since he or she was young. No one disagrees that upbringing has an impact on the growth of creativity, but no one denies the influence of the social and cultural aspects of creativity on a person. The matter is to combine these two factors (Al-Mannai, 2005).

According to David Perkins' Snowflake Model of Creativity, developed in the 1980s, the six common traits of creative people are:

1. Deep commitment to an individual aesthetic.
2. The ability to succeed in finding solutions
3. Intellectual mobility.
4. Willingness to take risks (the ability to accept failure).
5. Objectivity, and
6. Internal motivation.

The first three features are primarily cognitive, while the last three are dispositional. Because none of the six is known to be inherited, Perkins suggested that creativity might be learned or at least encouraged (Lydersen et al., 1980).

Gaire et Dallas (1970) identify the following characteristics of the creator: flexibility, sensitivity, tolerance, responsibility, and independence (Al-Obaidi, 2010). Saeed Abdul Aziz (2006) found that the creator has four characteristics that help him or her in the creative process: the commitment of the creative person; his insistence on continuing the creative process; his ardent motivation; and his tendency to persevere—all factors required for artistic progress in the path of the creative process to produce innovative work. A person who is not committed to any work will not have the ability to accomplish any work, as the ability to commit is one of the characteristics of a creative person (Abdul Aziz, 2006).

Not only do creative people need to challenge the audience, they also need to be able to challenge their own beliefs and values, and challenge the society. A person who challenges none is likely to be uncreative, while a person who can challenge all three can achieve to complete creativity. Sternberg (Kaufman & Glavino, 2019).

2.3. Innovation:

2.3.1. Innovation definition:

In 1939, the economic scholar Joseph Schumpeter is believed to have created the phrase "innovation," stating that "innovation is a necessary or necessary change" (Oslo Manual, 2018).

The general definition of "innovation" in the Oslo Manual ¹[1], which applies to all economic sectors in the System of National Accounts, including the public sector, is as follows: "An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)."

One of the most important ideas described by this phrase is that the term "innovation" is generally used to indicate something new, different, and one-of-a-kind. More specifically, "innovation" is defined as the process that results in everything new and has an impact on numerous industries (OECD/Eurostat, 2018). There is another definition from the Organization for Economic Cooperation and Development (OECD/Eurostat, 2005) that gives a general definition of innovation: "An innovation is the implementation of a new or significantly improved product (goods or services), process, new marketing method, or new organizational method in business practices, workplace organization, or external relations."

¹ Oslo Manual: The guide of the Organization for Economic Cooperation and Development (OECD) was first issued in 1991 in Oslo (Norway), and the last version was the fourth in 2018. It occupies a prominent global position for collecting and analyzing data and guidance related to scientific, technical, and innovative activities from recent studies and the consensus of experts in this field, which will mention some of the useful data in this study.

Also, "innovation" is the successful exploitation of new ideas and a profitable outcome of the creative process, which involves the creation and application of products, services, procedures, and processes in a particularly desirable and applicable context (Moussa et al., 2018). According to Wikipedia, "innovation" is essentially "a new way of doing something." Changes in thinking, goods, procedures, or organizations can be incremental, radical, or revolutionary. According to Peter Drucker (1985), innovation is the means through which entrepreneurs take advantage of change as an opportunity. The Dictionary of Psychology defines the concept of "innovation" as "the ability to produce new works in the fields of art or mechanics or to solve problems in new ways" (Khayati, 1997).

Yong Jan believes that the term "innovation" has its origins in the Latin term meaning "to make" and the Greek word meaning "accomplished" or "achieved." In the Arabic language, found in *Lisan al-Arab*² by Ibn Manzur, the meaning of the word "innovation" refers to a unique creation in the sense of achieving something that has a good quality. Also, innovation is defined as "the conversion of new knowledge into a new product, process, or service and the putting of this new product, process, or service into actual use" (Barringers, 2011).

2.3.2. Important definitions related to innovation:

When studying the concept of innovation, one should be clear about some relative terms. This will be an explanation of some important definitions that

² *Lisan Al Arab*, or *Tongue of Arabic*, is one of the largest and most detailed dictionaries in the Arabic language. It was written by the linguist, historian, and Islamic scholar Ibn Manzur, who died in 1311 CE (711 AH). In print, the dictionary has 15 or 18 volumes, depending on the edition. Ibn Manzur built the contents of his book with high accuracy, based on five of the most authoritative references to the Arabic language.

try to explain the concept of innovation and make it a clear picture without any impurities, which will facilitate understanding in many aspects of this study. These definitions are as follows:

- **Innovative organization:** The Oslo Manual defines innovation in terms of the (innovative organization): innovation must be novel (new or greatly enhanced) to the organization, but it is not required to be a market novelty. When applied to the public sector, the term covers a huge variety of innovations, from simple incremental improvements (Bugge and Bloch, 2016; Fuglsang, 2010) to revolutionary or transformational innovations that fundamentally change or eliminate procedures or services (Osborne & Brown, 2011).
- **Drivers of innovation:** Internal or external factors that incentivize innovation efforts (Oslo Manual, 2018).
- **Innovative activities:** Institutional entities may conduct several initiatives to create innovations. This might require specialized resources and involvement in particular tasks, such as policies, processes, and procedures (Oslo Manual, 2018).
- **Innovation management:** Planning, governing, and controlling internal and external resources for innovation are all part of the systematic process known as innovation management. This includes the way funding for innovation is distributed, how tasks and decision-making are organized among workers, how collaboration with external partners is managed, how external inputs are incorporated into a firm's innovation activities, and what is done to measure the outcomes of innovation and encourage learning from experience (Oslo Manual, 2018).
- **Public sector innovation:** Osborne & Brown (2005) defined public sector innovation as the introduction of new components into public service—in the

form of new knowledge, a new organization, and/or new managerial or procedural abilities—that indicate a discontinuity with the past. For instance, Bloch (2011) argues that public sector innovation "comprises new or significant changes to services and goods, operational processes, organizational methods, or the way your organization communicates with users. Innovations must be new to your organization, although they can have been developed by others. "

- **Innovation objectives:** Innovation objectives consist of a firm's identifiable goals that reflect its motives and underlying strategies concerning its innovation efforts. The objectives can concern the characteristics of the innovation itself, such as its specifications, or its market and economic objectives.

To describe innovation well, terms similar to it must be defined so that this confusion or similarity in meaning can be removed and innovation can be understood most comprehensively. These terms, such as creativity, invention, design thinking, or entrepreneurship, have a meaning similar to innovation and will be briefly characterized as follows:

- **Creativity:** As previously explained, creativity is the generation of unique and useful ideas (Amabile, 1988). Creativity is the process of coming up with a fresh or valuable idea that does not need to be implemented. The effective application of new ideas by an organization is referred to as innovation. In other words, creativity is the raw material for innovation and the basic first step in achieving it. A group of employees may provide a hundred feasible, innovative ideas for a new product or service, but only one will be implemented. This success in implementing one idea is called innovation (Barringers, 2016). Thus, creativity is the foundation for innovation, while innovation is the outcome of creativity.

Here comes an important concept that not every creative person is necessarily an innovative person and vice versa, and this necessitates that we know the difference between the creator and the innovator. Briefly, the creator is the person who produces new ideas, and the innovator is the one who transforms these ideas into tangible realities. Not every creator can turn his ideas into a real result, and not every innovator can generate new ideas, and it is better for a person to have both qualities. Innovation is also the guide that makes the creator capable of success because, without innovation (the result), creativity will not appear to the world as a product or process. Finally, creativity and innovation are not the same thing, but they do go hand in hand with each other toward success.

- **Invention:** An invention is the application of a new idea that results in something previously unknown or familiar, typically a process or device. Inventions often expand the boundaries of human knowledge, experience, or ability. Invention is a rare process and is not often repeated in the world, especially in administrative work, not like the innovation process. An example will be given to understand the difference between an invention and an innovation, which is the invention of the telephone. American inventor Alexander Graham Bell invented the telephone in 1876. The phone is a new thing that people did not know much about before this date. As for the improvements that took place on the phone later, until the newly developed form arrived, all these processes are called innovation.

The process of generating something new is known as invention or inventiveness. An invention, like innovation, is the result of the creative process; however, the emergence of an invention is commonly regarded as a random event, luck, or serendipity. In contrast, innovation is connected with the specific

marketing of a new product, service, or technical process, all of which are outcomes of creativity (Petkovska, 2015).

- **Exploration:** Exploration is the term for acquiring new knowledge of things that had previously existed, such as Christopher Columbus' discovery of America, for example. He did not make America but rather explored it (Makhan & Al-Shayeb, 2015). As for innovation, it is the production of something or a process, provided that this thing is new in its formulation, even if its elements existed before, such as innovating a work of art, chemistry, or physics. Innovation takes the existing product or process out of its usual form into something innovative, unlike exploration, which is the expansion of human awareness and knowledge of something new that has not been recognized before.
- **Design thinking:** A strong tool for showing novel approaches to thinking and acting is design thinking. Design thinking is an approach or tool to innovation and one of the ways to achieve it. Design thinking often focuses on people, whether they are customers or employees, by improving a particular product, process, or service. To carry out design thinking, the following five steps must be taken: Empathize, identify, ideate, prototype, and test. But when comparing design thinking with creativity, they have almost the same purpose, which is to reach innovation. In terms of implementation, the steps of creativity differ slightly from design thinking. Creativity takes the theoretical form only, while design thinking takes the experimental form in addition to the theoretical before preparing it for the stage of innovation.
- **Entrepreneurship:** Entrepreneurship is "the process by which individuals pursue opportunities without regard to the resources they currently control" (Stevenson & Jarillo, 1990). Fred Wilson simply defined entrepreneurship. He

described it as "the art of turning an idea into a business". Innovation is the process of creating something new, which is central to the entrepreneurial process (Baumol, 2011). Entrepreneurship is "the pursuit of opportunity beyond the resources you currently control" (Stevenson & Amabile, 1999). Innovations made by entrepreneurial firms have a big impact on society. Think about all the innovative products and services that improve our quality of life, productivity levels, health, and amusement (Barringers, 2016). According to common perception, entrepreneurship and innovation are strongly associated (Schumpeter, 1934).

2.3.3. Importance of Innovation:

Innovation is one of the few issues that has become obsolete worldwide, given its critical relevance to leaders, communities, nations, and eventually all of humanity. Innovation is the foundation for change or reforms, as well as the creation of possibilities, and it is critical to the survival, growth, excellence, and even continued dominance of some countries, governments, and organizations (Moussa et al., 2018). Also, innovation provides an essential spur for economic growth (Banerjee & Thakurta, 2013). Innovation can increase organizational performance (Damanpour et al. 2009) and productivity (Arundel et al. 2015).

Innovation plays an increasingly important role in almost all sectors and the daily lives of citizens around the world. On this basis, policymakers place the need for innovation at the center of their agenda (Oslo Manual, 2018). Kuznets (1962) noted the lack of data regarding innovation, and after responding to continuous research in this field, it has now led to a wide field of knowledge and

studies. Innovation is a generally acknowledged concept in today's world (Trott, 2017).

According to the findings (Ashfaq, 2001), innovative activity is strongly positively associated with productivity and per-capita income in both developed and developing nations. It has long been believed that innovation is the primary driver of growth, practically regardless of the state of the overall economy. For hundreds of years, debates and discussions have surrounded the subject of innovation. The ability to innovate and adapt is essential to survival and competition (Trott, 2017). In today's knowledge-rich and highly competitive global world, innovation has become the fundamental strategic focus of firms seeking to acquire a sustainable competitive advantage (Halbesleben et al., 2003). To maintain a competitive advantage against an expanding number of new, effective, and concentrated rivals, organizations, particularly those competing on a worldwide level, must focus on innovation (Devanna & Tichy, 1990).

According to a Deloitte study (Deloitte Center for Corporate Governance in the Middle East, 2016) about the significance of the role of innovation in enterprise management, organizations recognize the tactical role of innovation, even though today's environment obviously overshadows strategic risks, and that organizations that fall behind in the innovation curve may rapidly succumb to what is known as the opposite of innovation, which is turmoil and backwardness (Djalila et al., 2018).

By the 1980s, one of America's trademark sectors, heavy industry, had been losing ground for at least 20 years. Furthermore, in the late 1970s, deregulation gained strength, and by 1980, President Jimmy Carter had started to deregulate a variety of industries, including trucking, aviation, and railways. The

external environment as a whole required American management to change its perspective and adopt a more innovative, entrepreneurial approach to business (Trott, 2017).

Three-quarters of America's 113 million workers made a living as service providers during the mid-1980s, laying the foundation for what would later be known as the service industry. By the end of the 1980s, entrepreneurship had become popular, and American managers were finally accustomed to innovation and prioritizing from products to operations and from quantity to quality. Not only was it in America, but industries were changing around the world, forcing companies to start building the foundation for a new type of innovation (Trott, 2017).

It's remarkable to consider the advancements that innovation has achieved as firms approach the year 2010. Regardless of a company's market scope, innovation has all but become a necessity in today's global business environment. This is a result of the new truth that competition for any business now exists that extends outside of its local area. The truth is that organizations that realized this early on and fostered innovation as the greatest source of competitive advantage are now reaping the benefits.

One of the most basic questions in innovation research is why certain organizations can innovate while others cannot (Dosi, 1988; Nelson and Winter, 1982). To answer this question briefly, we believe that organizations that have the appropriate capabilities and have identified the factors of innovation and the correct methods of implementation will find a possibility in the successful performance of the innovation process.

In addition, there is another question to ask regarding this context: Why is it that some organizations desire to innovate but others do not? We believe that in order to answer this question, we must know exactly the meaning and importance of innovation because organizations that do not know the meaning and importance of innovation will never take this action. Also, if organizations understand the meaning, importance, and method of implementing innovation, even if they do not have the appropriate capabilities, they will find the skills and capabilities needed for innovation because they understand the role and effectiveness of innovation. The capacity to innovate is one of the key elements in today's economy for establishing competitive advantages and business success. Organizations must innovate to survive, expand, and develop, as well as to strengthen their position in the marketplace (Petkovska, 2015). Therefore, in this research, I chose the first topic in the innovation part, which is the meaning of innovation with its relative terms, and the next topic is the importance of innovation as a basic topic, which builds on other information related to innovation.

There may be some employees who can innovate, but there is no appropriate environment for this, or he does not trust their abilities to contribute to innovation. Some employees have ideas that detract from their importance and do not know that whatever ideas they have in their heads will be the most appropriate solution to the problem. Little continuous innovation contributes to the development and change of organizations in a significant way over time. Creativity and innovation have an important role in the development of institutions by facilitating tasks, reducing expenses, and increasing productivity.

Sheikh Mohammed bin Rashid Al Maktoum³ speaks in effective and motivational words about innovation and shows its value and importance, especially in the government work. He says that “innovation is a continuous journey that is not limited to any time and does not stop at the limits of time. We believe that what makes the difference in government work and achieves global leadership for the future industry is innovation”. Al Maktoum also says that innovation is a sustainable wealth and the basis for the development of peoples and the progress of countries into the future. Innovation is a governmental approach, a future necessity, and an engine to make a positive difference in the life of society. I conclude his speech about innovation with this phrase that says that our goal is for innovation to be a government habit and a well-established institutional daily practice.

2.3.4. Innovation types:

Joseph Schumpeter (1934) provided one of the earliest classifications of innovation types that distinguished innovation into five types (Sabe, 2014):

1. The illusion of generating a new product.
2. Establishing a new organization.
3. Implementing a new manufacturing process.
4. Spending new expenses for raw materials; and
5. Create a new market.

³ Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, has many contributions towards the innovation process. The most important of which is the establishment of the Mohammed bin Rashid Center for Government Innovation in 2019 to stimulate and enrich the culture of innovation in the government sector by developing an integrated system for innovation so that it becomes a mainstay of the government of the United Arab Emirates aimed at developing the public sector and enhancing the competitiveness of the UAE to be among the most innovative countries globally. Indeed, the UAE has become the first Arab country in the Global Innovation Index for the year 2021 and the 33rd globally.

Also, four different types of innovations are identified by the OECD (2005):

1. **Product innovation:** the introduction of a product or service that, in terms of its features or specified applications, is either new or significantly enhanced. This contains substantially better technical requirements, parts, and materials, software integration, user friendliness, or other operational qualities. Product innovation relates to the final product (or service) to be sold, especially its features. Examples of product innovations include instant photographs, cameras built into mobile phones, margarine without cholesterol, GPS, and novel materials like Teflon and Kevlar.
2. **Process innovation:** is the application of a new or considerably better production or distribution technique. This comprises major modifications in techniques, equipment, and/or software. Process innovation deals with how a product is made and delivered, particularly cost reductions or increased reliability. Examples of process innovation include the implementation of new technology such as lasers, sensors, automated equipment, and the digitalization of the printing process.
3. **Marketing innovation:** is the implementation of a new marketing method that involves major modifications to the product's design or packaging, product placement, product promotion, or pricing. Examples of marketing innovation include the employment of a cost factor for products, the creation of director-exclusive sales, the promotion of a new trademark, and the marketing of a new product.
4. **Organizational innovation:** refers to the adoption of a new organizational strategy in a company's operational procedures, workplace structure, or external relations. Examples of organizational innovation include changes to job

structure, the creation of teams for business improvement, the implementation of quality standards, etc.

Paul Trott (2017) classified innovation into seven types: product innovation, process innovation, organizational innovation, management innovation, production innovation, commercial or market innovation, and service innovation.

In addition to the classifications already given, another essential one classifies innovation into two categories: sustaining innovation and disruptive innovation. Christensen (2003) differentiates between disruptive innovations and sustaining innovations. Sustaining innovations were relevant to current customers since they improved on current products. For instance, the introduction of new computer software frequently results in enhanced benefits for existing clients. The second type is disruptive or transformative innovation, which involves making a change in a specific procedure or product in order to improve performance. Disruptive innovations frequently produce better results than expected. For example, while the introduction of a drive with a specific size of disks to replace them with older drives significantly increased speed, it also caused problems for users accustomed to the previous format. These disruptive innovations also created new markets that eventually consumed the previous ones (Trott, 2017).

Sustaining innovation is divided into two types by the degree of innovativeness: incremental and radical innovation (Petkovska, 2015). Industrial innovation comprises both primary (radical) and secondary (incremental) technological improvements. Incremental innovation is an increase in a procedure or adding a certain thing to a service or product to improve its performance. Progressive, continuous, and cumulative innovation are examples of incremental

innovation, which excludes the use of new scientific components to enhance existing technology. They are either a modified version of an existing product or process, or they relate to the incremental progress of current technology or manufacturing on the market. When an entirely new product, service, or new method of production or distribution is introduced, it is referred to as a radical innovation. This makes the competition between the current products and services impossible. These innovations could combine new technologies or be based on integrating technologies that have been modified for new purposes (Petkovska, 2015).

The capabilities of existing organizations are strengthened by incremental innovation, whereas radical innovation drives them to ask new questions, use new commercial and technical talents, and apply novel ways of problem-solving. According to Abernathy and Utterbach (1978), any industrial sector begins with a radical innovation in the product, which is then followed by an incremental innovation in the production processes, which is then followed by an increase in innovation on a wide scale. This affects the nature of innovation drivers because future innovation becomes more incremental as the organization gains knowledge and improves its effectiveness (Trott, 2017).

Henderson and Clark (1990) classify innovation into four types: incremental, modular, radical, and architectural. In essence, they make a distinction between these four types of innovations based on a product's components and how they are integrated into the system. Technology advancement might represent a radical innovation within this framework only if it completely transforms component and architectural knowledge. The same is true for incremental innovations, which will draw on existing components and architectural expertise. Architectural knowledge is unaffected by modular innovations, although one or

more components may need additional information. The linkage of components will be greatly impacted by architectural innovation, but the understanding of individual components will not change.

Before the Henderson and Clark model, a distinction was made between radical and incremental innovations, and it was said that employees would be in a stronger state if the innovation was incremental because they could use the entire process using existing knowledge and resources. In contrast, new entrants will greatly benefit if the innovation is radical since they will not be required to replace their base of knowledge. Moreover, employees struggle to deal with radical innovation due to a limitation in management mentality as well as a strategic motivation to engage in the innovation if it would destroy their existing products (Trott, 2017).

2.3.5. Innovation awareness:

Awareness is the first concept required to build an innovative organization. According to Hassinger (1959), employees must sense the need for innovation before gaining knowledge about it and thereby start the earliest phases of awareness. This enables employees in terms of awareness since if employees do not see the need for innovation, they will not engage in awareness and influence. Likewise, Rogers (1995) introduced the phrase "selective exposure" with awareness, arguing that employees would consciously or unconsciously ignore instructions that opposed their preference. Similarly, this enables employees by providing them with a level of choice in terms of knowledge and impact, in that they can choose not to become aware of an innovation. A scientist's view of

innovation may be very different from that of an accountant in the same organization.

The study's objective is to measure public sector employees' awareness, and it will do so by better understanding how individuals learn about innovations and how that knowledge influences their perceptions of such innovations. Larsen (2011) argues that innovation diffusion will help spread awareness among employees. The topics of awareness and influence in the early phases of the diffusion process are essential to this study's investigation of innovation diffusion (Rogers, 2003). Workplace culture for innovation has a key role in either supporting or preventing innovation awareness (Albury, 2005).

Many employees lack enough understanding and knowledge about innovation as a result of incomplete education programs throughout all training sectors, especially official education providers like postsecondary colleges, industry associations, and informal training inside organizations. When the major work is viewed as straightforward and simple and commitments to innovation are ignored in favor of key business objectives, innovation awareness is further delayed (Emuze & Behm, 2017). As a result, the ability of an organization to attract, create, motivate, and retain a sufficient number of leaders with relevant traits to affect the environment of creativity in the workplace is a great factor in the stimulation of innovation (Halbesleben et al., 2003).

An employee is unlikely to engage in either creativity or innovation if neither of those drivers are included in their job description. Assuring that everyone is aware of expectations will help prevent people from acting in ways that will not earn them rewards. It tends to get worse because many organizations still do not have job descriptions that are relevant to their employees. When

employees are responsible for mission implementation, which is in their job description, that will make them aware of innovation.

Also, the influence of an employee's communication system inside their contextual environment, highly planned and effective marketing campaigns, and accidental exposure to innovations are all important but unique. Additional key considerations are the employee's age, education, geography, and financial situation (Rogers, 2003). High levels of awareness of innovations are made possible by putting workers at the heart of the innovation process (Sarantakos, 1993). It is believed that an employee's network of relationships and larger organizational pressures impact how they perceive their needs and personal preferences. As a result, employees may find it difficult to ignore innovations.

Launching government campaigns or initiatives from organizations that appreciate innovative work increases awareness of innovation (Rogers, 2003). The European Community R&D Information Service Committee, or CORDIS, has created a new online entrance where users may get information on several innovation program activities designed to raise awareness of innovation. The Government of the Kingdom of Bahrain launched the Government Innovation Competition (Fikra) in 2018, and this initiative contributed to raising the awareness of public sector employees about participation and initiative in creating innovative work to develop performance and increase productivity. Indeed, several excellent and effective initiatives have been obtained from Bahraini public sector employees and have been successfully implemented on the ground.

As for the United Arab Emirates, which is considered the first in the Arab world in the Global Innovation Index for the year 2023 and ranked number 32 globally, it has encouraged innovation on a large scale within the Emirates. In

order to collaborate with the UAE in generating suggestions and pioneering ideas for defining the future of governments and developing societies, it draws elites of young talents from academic institutions, universities, and colleges in the UAE and throughout the world. These solutions can be utilized to create outstanding projects for the UAE and to make significant changes to the way governments operate.

2.3.6. How can find the innovation?

However, innovation is not a linear and sequential process that can be easily enumerated but rather includes many interactions and feedback in the creation and use of knowledge (Nelson, 1993). It is possible to obtain information on innovation through the upper management towards the employees, or it can be from the direct employees (the lower layer) to the managers (Demircioglu & Audretsch, 2017).

The importance of a company's board of directors concentrating on innovation and putting it on a priority list, allocating a portion of its earnings to support the innovation process, and that the board's interests are not limited to financial and operational management only, because organizations that do not achieve innovation will not be able to continue, which is a main factor in the orientalization of the coming years, monitoring future changes, keeping pace with them, and achieving success (Demircioglu & Audretsch, 2017).

Front-line employees and middle managers who engage with service or process users might provide ideas for 'bottom-up' innovations (Arundel and Huber, 2013; Borins, 2001; Bugge et al., 2011). Bottom-up innovations are typically developed at lower levels of public sector organizations or individual jobs, and they depend on people's and jobs' efforts to discover and develop ideas.

For bottom-up innovations, significant policy-relevant concerns are associated with employee capabilities, environments that could support innovation influences by employees and middle management, and how innovations are transmitted to other organizations.

A new research program on innovation in the public sector would occur from improved data collection, much like how the Oslo Manual guidelines' implementation in numerous business innovation surveys led to the creation of a new research program on innovation in the private sector, which provided crucial insights for innovation theory and policies. From fewer than ten per year in the 1990s to almost 100 in 2013, academic articles using data from the European Community Innovation Survey (CIS) on business innovation have increased in number. This growth is at least partially attributable to CIS data opening up new possibilities for innovation studies. (Arundel et al., 2014). The development of a new research program on public sector innovation will greatly benefit from government data collection assistance.

Results in the public sector are hard to evaluate since there is no particular combined result shared by all public sector organizations that is equal to sales income from product innovations in the private sector. The majority of the innovation results measured in public sector innovation surveys address basic subjective results that apply to several different kinds of public sector organizations, such as simpler management procedures, rapid service delivery, enhanced customer experience, sharing of data, and service quality improvements (Demircioglu & Audretsch, 2017).

Results in the public sector have the possibility of bias from asking managers to report on their organization's innovations, which might also contribute

to the overestimation of successful results (Damanpour et al., 2009). Also, the collection of data on results after a sufficient amount of time has elapsed for results to be obvious in order to avoid memory recall biases represents another problem. Collecting result data for a single innovation specified by the respondent is one way of eliminating potential biases from self-reporting and providing ample time for result observation.

Surveys on innovation must collect enough data to determine "what works" and "what stifles" innovation. These variables must also be considered for certain sorts of innovations, since what works for developing a new service may differ from what works for changing an internal procedure. It is also beneficial to gather knowledge on how innovation abilities are achieved, such as if innovation drivers are driven by design-thinking or change management approaches that provide construction for innovation activities (Demircioglu & Audretsch, 2017).

According to Drucker, the discipline of innovation can be both studied and practiced. Although he never accepted a theory of innovation, he believed there was enough information to establish it as a practice based on when, where, and how one searches systematically for (new) opportunities and how one assesses the probability of success or the dangers of their failure (Drucker, 1985). According to Drucker, systematic innovation involves the deliberate and methodical pursuit of change as well as the scientific evaluation of the opportunities for economic or social innovation that these changes may present. As a result, both academic institutions and huge corporate R&D departments participated in the 1980s innovation. People leave the corporate world and become independent when they wish to innovate and be entrepreneurs.

According to Arundel et al. (2014), many important sources deal with the title of innovation in detail, and it is possible to draw greatly from them when wanting to study the title of innovation and address its most important topics. One of the most important sources of innovation is the Oslo Manual, which is issued continuously and shows the most prominent recent studies within accurate and summarized statistical studies in a useful way that is accessible to all. There are also many books in this context and studies published in accredited journals explaining the methodology of innovation and its access, which has increased dramatically in the past few years (Arundel et al., 2014). In this study, I refer to many references and studies in the reference section regarding innovation data and the topics around it.

2.3.7. An overview on creativity and innovation in Bahrain:

In Bahrain, where this study is taking place, it has taken special care of the creators, innovators, and inventors, and all of them raised the flag of the Kingdom of Bahrain high in the sky of creativity. The history of Bahrain is full of these brilliant names, and the new generation will remember them as follows:

1. Dr. Amina Al-Hawaj, the first Bahraini inventor in this field, has three patents registered in Bahrain, the Gulf Cooperation Council countries, and Britain. She was born in 1989. She works as a physiotherapist and has a PhD degree from the University of Central Lancashire in Britain. She received the most important international awards, medals, and shields in the field of creativity and innovation.
2. Dr. Abrar Ammar, a physiotherapist at the Ministry of Labor and Social Development who holds a bachelor's degree in physiotherapy from the Jordan

University of Science and Technology, is an expert in the field of disability and has an interest in innovations. She invented the A.H. Biodynamic pendulum trainer, which is a device that helps people with physical disabilities move independently and perform their life activities without relying on anyone. I participated in the Inventions Program of the Ministry of Youth and Sports Affairs in 2017 and won the Creativity Award.

3. Inventor Zainab Abu Suhail, born in 1994, holds a BA in Nursing and a Diploma in French. Her invention is a device for splinting fractures "that sprays materials that turn from liquid to solid to splint fractures."
4. Inventor Ali Al-Sabaa, born in 1992, holds a bachelor's degree in mechanical engineering; inventor Ali Ismail, born in 1994, holds a degree in computer and communications engineering; and inventor Janan Al-Marzouq, born in 1996, specializes in engineering. They confirmed their experience in the world of innovation since their participation in the design competition in the industrial city of Youth City 2030, which is the city whose idea and implementation have been adopted by the Ministry of Youth and Sports.
5. Inventor Zainab Al-Ansari, born in February 1990, holds a degree in information technology engineering and invented a wheelchair that moves with sound.
6. Zainab Hammadi, who holds a bachelor's degree in chemistry from Kuwait University, invented a shoe equipped with special sensors that serve blind people by sensing the surrounding environment and the barriers surrounding them at a distance of one and a half meters.

Also, seeing talented people or people with high capabilities gives motivation to create creative and innovative products. When there are such creators in any country and others who serve on its land, this is reflected in the level of

creativity in society and encourages them to present what they have for their country. The existence of creators or innovators like those in Bahrain enriched the country, created a creative environment, and motivated others to become innovative and be on this golden list, which brings pride to them and returns to the country. Bahrain ranks 67th among the 132 economies featured in the global innovation index in 2023, and Bahrain ranks 9th among the 18 economies in Northern Africa and Western Asia and it ranks 46th among the 50 high income group economies.

The reason for choosing the Kingdom of Bahrain as a sample to conduct this study is not only because it is my country, but it is also a country that always supports creativity and innovation drivers because it knows that innovators are the true wealth of any sophisticated human society in the world. Bahrain sponsors the creators since their childhood in the school stages and honors the outstanding and talented among them annually in every academic stage up to the university under the auspices of the Ministry of Education and awards appreciation to the creators under the tutelage of Bahrain government.

Quality awards are also allocated to innovators in all fields, such as the State Prize for Intellectual Production, which was established in 1983 and consists of three awards granted annually to honor creators in the fields of science, literature and art. Also, the Bahrain Crown Prince Award for Scientific Research since 1987 to encourage innovators in the field of scientific research in the natural, engineering, medical, economic and social sciences. The Prime Minister's Award for Industrial Excellence is granted to industrial organizations in Bahrain and encourages them to develop levels of work and quality and stimulate creative activities in the field of industry. The Inventions Program of the Ministry of Youth and Sports Affairs to win the Creativity Award. There are also other sponsors other

than government support, such as the Kanoo Award for Excellence and Creativity, which Yusuf bin Ahmed Kanoo gives to innovators in the private sector. Many other support, prizes and competitions that stimulate creativity and innovation in Bahrain (Al-Mannai, 2005).

Since 2018, the Crown Prince and Prime Minister of the Kingdom of Bahrain announced the Government Innovation Competition (Fikra), which contributes to stimulating competition among public sector employees and promoting a culture of creativity and innovation in government work in line with the principles of Bahrain Economic Vision 2030 based on sustainability, competitiveness, and justice. This competition is held annually for all public sector institutions to encourage all employees to innovate and be creative, and in fact, Bahrain takes advantage of these creative ideas and innovative contributions to make a great leap and continue development perfectly and applies them to solve many previous obstacles in public sector work.

In 2006, the Kingdom established a labour fund called Tamkeen . This was used as a vehicle to promote investment in innovation and was used as an engine to strengthen the Bahraini economy by supporting and nurturing the public and private sector. Tamkeen supports individuals and institutions by financing training programs, professional certification, and wage support. It has launched a series of initiatives to support institutions and individuals to grow, innovate, and excel in their fields.

Bahrain also provides many innovation centers in various regions. In addition to providing citizens the opportunity to participate in the (Kawader) program, with the direct support of the Prime Minister. This program is designed to assign young and distinguished Bahraini talents from government agencies for a

period of one year to the Office of the Prime Minister and train them at a high level in research, analysis, and leadership methods to serve their basic work in their original government agencies. In 2023, the Prime Minister directed to increase the reward for a distinguished employee in Bahrain to 3,000 B.D to stimulate excellence and creativity and increase productivity in public institutions. All that was mentioned is a simple thing in the midst of Bahrain's contributions towards creativity and innovation, whether from the government or from various institutions or some individuals.

2.3.8. Public & Private sector innovation:

An organization's difficulty in performing or adapting to change results from a shortage of innovation in the world of organizations, whether they are private or public (Serrat, 2017). Despite significant differences between the public and private sectors that should be recognized in a measuring framework, there is also a great deal of common ground that can be called upon (Bloch & Bugge, 2013). There is no single definition of innovation in the public sector. However, some components of business innovation and public sector innovation may be similar, such as the desire to improve quality and efficiency through changes to organizational structures, operations, or products (Moussa et al., 2018). Private sector innovation is the introduction of a new product or a new business process or an improvement in any of them or a combination thereof that differs substantially from the company's previous products or previous business processes that were introduced in the market or used by the company (Oslo Manual, 2018).

In this section of the study, I am going to give a simple overview of some of the differences between public and private sector innovation to facilitate

the study of the subject and achieve one of the objectives of this study. We will end this section with an explanatory table that summarizes the most important differences between public and private sector innovation.

While innovations in the private sector are thought to be extensively adopted, there is an increasing understanding today of the need for more systematic and comparative statistics on innovation in the public sector. Data is necessary to enhance understanding of the rate and level of innovation in the public sector, as well as its motivations, processes, and effects. Even if there is a need to better assess public sector innovation, it is unclear what sorts of measurements would be most relevant and what characteristics of public sector innovation can be assessed in reality (Bloch, 2011).

However, the majority of innovative research has been performed in the private sector. Innovation has been primarily studied in the private sector (Bugge and Bloch, 2016). Despite studies done in this field, there is an important question of why the tendency to innovate differs among organizations, notably concentrated in the private sector, whereas the public sector is mostly ignored (Osborne and Brown, 2013). Of course, public sector organizations do not behave in the same way as private sector organizations and do not represent a mirror of their way of working. Public sector innovations in general are always seen through the prism of private sector frameworks (Bloch, 2016).

This lack of study is regrettable because there is a wealth of empirical examples and cases indicating that public sector innovation could have a significant impact (Geels, 2002; Geels and Schot, 2007; Kuhlmann and Rip, 2014; Turnheim and Geels, 2013). However, the tools and strategies for including individuals in public sector innovation are still immature (Bekkers et al., 2013).

Several of the innovative drivers described in the Oslo Manual (2018) (R&D, acquisition of external expertise such as intellectual property, engineering) are less frequent in the public sector, whereas others (training and equipment purchases) are more common.

Djellal et al. (2013) used an analytical lens to examine variations in service innovation across the private and public sectors. They discovered that the literature on innovation in the services of public organizations had taken numerous approaches, ranging from the view that these services are significantly different from those supplied by private organizations to the belief that they have many similarities. Also, Djellal et al. (2013) stated that most research on differences between the public and private sectors was based on informal evidence, indicating that more regular data is required to accurately define and describe public sector innovation.

The innovation process in the private sector, in particular, has the potential to boost competitive advantage through access to external knowledge, quicker time-to-market, and lower failure rates of innovations (Guertler & Lindemann, 2016). On the other hand, the innovation process in the public sector may result in higher knowledge of social issues; services that are more successful generated from wide citizen participation, and enhanced trust between governments and citizens (Mergel & Desouza, 2013). It appears that the private sector is becoming increasingly more independent than the public sector (Al-Noaimi, 2019).

Many of these variables are either irrelevant to business or taken for granted, and hence are not addressed in the Oslo Manual. An important difference between the public and private sectors, for example, is the governance of control

and decision-making, which is far more diverse in the public sector than in the private sector. In this context, innovation is even referred to as a "magical idea" (Pollitt & Hupe, 2011) that is used to define the essential change in the public sector to increase not only its efficacy and efficiency but also its legitimacy (Bekkers et al., 2011).

Policy interest in public sector innovation is more focused on the innovation process, or how innovation takes place, than in the private sector, to make greater use of innovation to solve problems and enhance innovation results (Eggers and Singh, 2009). The notion that public sector organizations innovate less than private businesses is commonly believed. The idea that public sector organizations innovate less than private companies is not new. However, this idea has not been scientifically proven, and Louise Earl (2002) showed in research conducted in Canada that public sector organizations in that country are almost twice as innovative as private organizations.

Innovations in the private sector are seen as more user-focused and dependent on employees. Innovations in the public sector are top-down in nature and tied to policy and senior executives' initiatives. However, case studies show that this is not always the case (Fuglsang, 2008). There are also routine-integrated innovations, or bricolage," that are practice-based. Innovations can occasionally be forgotten in employees' routine tasks. In terms of competitiveness, the private sector relies heavily on innovation, which helps reduce costs, enhance goods, and develop new markets. Nowadays, innovation is becoming increasingly important in the public sector since it has the potential to improve the delivery of services while also lowering costs. Innovation is a key driver of economic advancement and competitiveness in all economies (Cankar & Petkovšek, 2013).

Cooperation between public and private institutions results in improved and more effective public and private services and products. Cooperation allows individuals to communicate and share knowledge, experiences, know-how, and expertise. Cooperation helps to introduce a larger variety of skills and abilities, as well as a more responsive work culture, into public sector organizations, as well as new thinking and creativity. Given the present economic and financial crisis, creativity and innovation in the public sector are even more crucial, which implies that governments should put more emphasis on fostering innovation in this area (Cankar & Petkovšek, 2013).

The public sector is extremely diverse and is made up of a complicated, open structure of organizations that are each responsible for a different set of duties. Consequently, because of the extensive chain of command, decision-making may be slower than in the private sector (Bloch, 2011).

Jon Andersen (2012) conducted research in Sweden on the differences between the change-oriented behavior of public and private managers. Information was gathered from 343 middle managers at two public organizations (social insurance offices and senior secondary schools) and one private business. Andersen said that managers have the best chance of implementing organizational changes if they display a change-centered leadership style, are perceptive, can identify needs for change, and act with conduct that is driven by power. According to the study's findings, business managers were less change-oriented than their colleagues in public organizations. The primary cause of the differences was shown to be the fact that several parts of the public sector and some public institutions in Sweden have experienced significant and ongoing changes over the past 10 years. The public sector has faced opportunities and obstacles that have pushed it to innovate (Andersen, 2012).

In contrast to the private sector, the public sector implements policies that are often described as intended to improve society as a whole rather than to gain profit. A lack of competitiveness in the public sector results in a lack of motivation to do better. The public sector, however, is much more inventive and dynamic than most people realize, as seen by the creation of new active labor market regulations, proactive healthcare initiatives, and climate change initiatives. Additionally, there are managers and employees in the public sector who are motivated by professional standards and goals, well-educated, and capable of responding to new issues and difficulties while also improving services. By providing constructive feedback on policies and services, among other things, citizens actively participate in fostering public innovation (Halvorsen et al., 2005).

Given the acceptance of the concept of public sector innovation, it's critical to know what we precisely know about innovation in the public sector. When public administration is looked at, it sees a limited number of researchers who have looked at the innovativeness of public organizations, the patterns of the innovation process, and the outcomes of innovation more empirically across a variety of different types of public agencies (Berry, 1994; Borins, 2001; Salge & Vera, 2009), mostly in a combination of looking at the learning capacity of these organizations (Walker, 2014). On the other hand, several publications (Osborne & Brown, 2011; Hartley et al., 2013) have attempted to understand the meaning and role of public sector innovation through a more conceptual approach.

Measurement of ideas for innovation should gather data on the sources of ideas, including external sources outside the public sector (Lagunes and Rubalcaba, 2015), sources from various levels inside the public sector hierarchy, and details on the attributes of innovations (category, novelty, level of investment)

by the source of the idea. Innovation is an ongoing strategy for addressing service and efficiency goals throughout the public sector.

Many public sector managers feel that innovation should "make anything better" or have the goal of "providing better results". According to the Australian and European Cognitive Examination, managers in the public sector do not consider "modifying organizational structures" to be an innovation unless it produces a better outcome or benefit (Arundel, 2014).

The public sector's innovations are more important than how these activities are performed (Arundel and Huber, 2013). Miao et al. (2018) observed in a recent study the paucity of research on the impact of creative performance in public sector organizations, particularly when innovation in public sector organizations has been related to better effectiveness, efficiency, and citizen involvement. Public sector organizations have a reputation for being conservative and bureaucratic, although the public sector may be credited with significant inventive discoveries like the internet (Windrum, 2008).

However, what encourages or discourages innovation in the public sector needs careful consideration for a variety of reasons. A deeper understanding of how to encourage and foster innovation in the public sector may be extremely useful to governments and, without a doubt, to their whole countries. Public sector organizations must be effective at controlling costs, enhancing service quality, and fulfilling the demands of their communities (Moussa et al., 2018). The innovation capacity of public organizations can be improved if it is taken into consideration when undertaking the building blocks of innovation processes (Moussa et al., 2018).

Although there is an increasing awareness that much innovation occurs in the public sector, it is also acknowledged that more systematic efforts to stimulate innovation are required to solve the social and economic difficulties that the public sector confronts (Bloch & Bugge, 2013). However, there is a lack of a shared concept of what public sector innovation is, as well as a measuring framework that may shed light on the processes of innovation in the public sector (Bloch & Bugge, 2013). Finally, I would like to explain a summary of the most prominent differences between innovation in the public and private sectors based on prior studies that I mentioned in this part, as shown in the table below:

	Elements of evaluation	Public sector innovation	Private sector innovation	Resource
1	Definition	Change in processes, services, products, or organizational methods with the aim of better quality and efficiency.	The introduction of a new product or business process or an improvement in any of them that differs substantially from the company's products or previous business processes.	Public sector innovation (Moussa et al., 2018) – private sector innovation (Oslo Manual, 2018).
2	Number of studies	Less	More	Osborne & Brown, 2016
3	Seniority in appearance	Later	Before	Djellal et al, 2013
4	Competitive advantage	Less	More	Guertler & Lindemann, 2016
5	Employee involvement in innovation	Less	More	Bakkers et al., 2013
6	R&D, intellectual property and engineering activities	Less	More	Oslo Manual, 2018
7	Training	More	Less	Oslo Manual, 2018
8	Speed of access to the market	Less	More	Guertler & Lindemann, 2016

9	Failure rate of innovation	More	Less	Guertler & Lindemann, 2016
10	Knowledge of social issues	More	Less	Mergel & Desouza, 2013
11	Successful services	More	Less	Mergel & Desouza, 2013
12	Citizens trust	More	Less	Mergel & Desouza, 2013
13	Governance of control	More	Less	Pollitt & Hupe, 2011
14	Policy interest in innovation	More	Less	Eggers & Singh, 2009
15	Innovativeness	More	Less	Earl, 2002
16	Who is innovating?	Managers	Employees	Fuglsang, 2008
17	Decision-making process	Slow	Fast	Bloch, 2011
18	Manager's change-oriented	More	Less	Andersen, 2012
19	Motivating employees	Less	More	Halvorsen et al., 2005
20	Equipment purchase (Budget)	More	Less	Oslo Manual, 2018

Table 1-2: Differences between public and private sector innovation

2.4. Creativity and innovation drivers:

Furthermore, the fourth version of the Oslo Manual advises gathering data on several sorts of innovations, mainly products (goods or services) and procedures.

Sahni et al. (2013) displayed an explicit framework for identifying managerial activities conducive to innovation in public organizations—experimentation, responding to low-performers, the existence of feedback loops, motivation to make improvements, and budget constraints. The role of factors such as cooperation, knowledge sources, innovation drivers such as training, and

innovation objectives has been reviewed in other research on e-government, public policy, and public management (de Vries et al., 2018). However, the relevance of individual things within a theme differs across the private and public sectors due to variances in what is measurable, contextually relevant, and important to policy.

Also, (Demircioglu & Audretsch, 2017) conducted empirical evidence that suggests that important conditions specific to public organizations influence the likelihood of innovative activity. In particular, experimentation, responding to low-performers, the existence of feedback loops, budget constraints, and motivation to make improvements enhance the likelihood of innovative activity. Questions can also ask if certain methods are "supportive of innovation" or a "barrier to innovation," as in the Silvander and Hagen survey (2015).

In this study, I will choose the methods that are supportive of creativity and innovation in public sector organizations. This study was chosen based on these drivers specifically because they highlight the creativity and innovation based on the results of previous studies, which were of great importance in the success of this research and the ease of evaluating its effects in most organizations. It is worth noting that among the six drivers, there are drivers that focus on the employee's performance, and they are experimentation, motivation, and learning, and this is the first category. As for the drivers that focus on managers performing them in the organization, they are responding to low performers and feedback, and this is the second category. The third category is the factor of budget constraints that the organization or government focuses on. After this study, we will see which type of factor has a greater impact on the occurrence of creativity and innovation.

We can now conclude from all previous opinions that creativity and innovation represent two sides of the same coin and carry the same principle in finding something new or different from the previous situation for the purpose of development, and since they have almost the same meaning and importance and we cannot obtain one without the other. I will show in this study a link any factor with innovation as being related to creativity as well as vice versa. Because creativity is the foundation of innovation, and innovation does not occur without creativity.

2.4.1. Experimentation:

Employees desire to be in control of their activities, so they want to be able to choose how they conduct their work. Experimentation inside an organization is believed to produce innovation and creativity (Deci & Ryan, 1985; Ryan & Deci, 2000). Offering options and the opportunity for experimentation increases intrinsic motivation and satisfaction by increasing employees' autonomy, competence, and connectedness (Zuckerman et al., 1978). Borins (2001) says, "The process of innovation usually proceeds through trial and error". Additionally, there is a need for more experimentation in the collection of data on public sector innovation.

Organizations conduct experiments, implement a procedure for analyzing the outcomes, and then expand, adapt, or cease innovation based on the results. Thus, when employees are given opportunities and the freedom to experiment, they may love their jobs while also increasing their capability, knowledge, and experience; as a result, they are more likely to innovate.

Employees in the public sector are likewise strongly dependent on creativity and innovation to improve their procedures, operations, and techniques (Imran et al., 2010; Windrum and Koch, 2008). Also, experimentation by employees of public sector organizations increases the potential for innovative activity (Demircioglu & Audretsch, 2017).

Furthermore, Albury (2011) argues that "incentivized experimentation" allows public organizations to innovate and concludes that "providing opportunities for creativity and adaptation, openness, and deregulation are all extremely critical to whether innovation occurs and spreads". Space, openness, and deregulation are crucial elements that enable public-sector employees to experiment and innovate. Similarly, Sahni et al. (2013) argue that "essentially creative and innovative ideas seldom occur without the ability to form experimental infrastructure. The Australian government promotes trials, allowing employees to conduct tests relating to their jobs. According to the APSC, "the government can support increased experimentation and innovation in program implementation and service delivery if a single solution is unlikely to properly address the overall issue" (APSC, 2003). More experimentation raises the possibility of innovative action.

Employees who take initiative, try new things, and innovate must recognize the size of the issue (Glor, 2001). According to Marfleet (2008), employees tend to perform best in businesses that "promote innovation and experimentation". According to Dawson and Denford (2015), government agency leaders and organizations should support experimentation since it will enhance creative behavior and innovation. As a result, when employees experiment, they are more driven to work and can produce innovations.

Technology hazards (Pärna & von Tunzelmann, 2007), rejection by potential consumers, or a lack of resources and capacities for creating and executing an innovation (Kay & Goldspink, 2012) are only a few reasons why an innovation culture needs procedures for controlling the risk of failure. According to several studies (Borins, 2001; Brown, 2010; Kay & Goldspink, 2012; Brown & Osborne, 2013; Potts & Kastle, 2010), creativity can be hampered by a risk-averse organizational culture that discourages experimentation.

Risk-averse circumstances can result from political harm to elected officials from media coverage of failed policies (Albury, 2005; Borins, 2001; Potts & Kastle, 2010); reputational risks for executives (Pärna & von Tunzelmann, 2007); and self-selection impacts in which risk-averse people are more likely to obtain employment in the public sector than "risk-tolerant" people (Pfeifer, 2010; Buurman et al., 2012; Noussair et al., 2014).

A section of legal affairs may legitimately prohibit innovation to maintain the integrity of a risk-averse legal system, whereas a sector of infrastructure or agriculture may have more freedom to explore hazardous innovations (Williamson, 1999).

The absence of organizational support for experimentation could limit innovation in the public sector or confine it to slow, incremental advances (Osborne & Brown, 2011). Furthermore, public sector organizations follow current procedures and rules, which may restrict their ability to innovate, especially when working with external sources (Mergel & Desouza, 2013). According to Denhardt et al. (2009), although managers can initiate several modifications "from the top," in the long term, many more innovations are likely to be implemented if those throughout the organization realize that change and innovation are valued, that

they have the authority to take action, and that those particular risks of experimentation will be supported by top executives.

Experimentation could also investigate using questions on a specific innovation to see if it can indicate variances in the foundation of ideas for various types of innovations and perhaps give high-quality data on innovation investments. Improving data on innovation results in the public sector is a critical part of experimentation. This needs more subjective data on the value of service innovations to people as well as interval-level data on the influence of public sector innovation on efficacy benefits.

Not only does a lack of opportunity to use young skills reduce the desire to learn later, but it also leads to skill loss because qualifying skills can atrophy through leave (Pentland, 1989). The capacity to evaluate management techniques for innovation and how they are applied at various levels within an organization would benefit it both on a theoretical and empirical level (de Vries et al., 2018).

Now, the first hypothesis can be stated as:

H1: Experimentation has a significant positive impact on creativity and innovation in public sector organizations.

2.4.2. Feedback:

Feedback is comments or notes given to someone with authority (such as a manager or department supervisor) to indicate what can be done to improve and innovate something in their work. When organizations and organizational

managers place a premium on employee improvement and managers are held accountable to a variety of shareholders, organizations and managers are expected to provide feedback to employees (Steelman et al., 2004). Feedback has a significant impact on organizational results like employee performance (Higgins et al., 2002; Kluger & DeNisi, 1996). According to Weibel & Six (2013), if feedback encourages an individual's self-development, such as learning, and raises an employee's self-esteem, it will positively influence the individual's motivation and innovative performance.

Constructive feedback, in particular, improves intrinsic motivation (Deci, 1971; Harackiewicz, 1979; Ryan and Deci, 2000), fosters the desire for competence (Six, 2013; Weibel, 2007), and so leads to improved performance and innovation. Public managers cannot make excellent decisions about work without clear feedback, such as whether to concentrate on enhancing service versus cutting costs (Sahni et al., 2013). In addition, feedback from employees of public sector organizations increases innovation potential (Demircioglu & Audretsch, 2017).

When constructive feedback does not compromise employees' autonomy, it promotes the integration of actions and self-determination. According to a meta-analysis, seeking feedback is positively and strongly associated with job satisfaction, proactive relationships, communication, and socialization (Ansell et al., 2015). According to Ryan and Deci (2000), providing optimal challenges and effectively relevant feedback encourages internalization, which will inspire employees to be more innovative and increase their learning and growth. Receiving performance feedback will also increase employee competence and relatedness, both of which are positively related to innovation. As a result, because feedback systems improve employees' competence, autonomy, and relatedness,

they also tend to improve employees' innovativeness. Employees who get feedback can conduct additional innovations.

This strategy may decrease bias by requiring respondents to focus on a particular idea. If an innovation's description is collected, the information might be used in follow-up questions on results after a reasonable time lapse (Gault, 2018). None of the approaches for evaluating results via surveys are likely to be useful for long-term results that occur more than three to five years after execution due to personnel turnover or subsequent changes that replace the original innovation over time. Case studies are the greatest way to explore long-term consequences. Case studies may be necessary to evaluate complicated outcomes that cannot be expressed in a questionnaire, where best practice restricts questions to one or two sentences.

Thus, the hypothesis can be stated as follows:

H2: Feedback has a significant positive impact on creativity and innovation in public sector organizations.

2.4.3. Motivation:

Motivation is derived from the word "motive," which describes a person's needs, desires, wants, or ambitions. It involves encouraging others to act immediately to accomplish a desired objective. Motivating employees towards creativity and innovation is one of the most important things that encourages them to do their best to achieve the desired goals by providing influencing factors that assist in the motivation process. There is significant policy concern about how to

encourage innovation in the public sector to increase resource efficiency and public service quality and solve a wide variety of societal challenges such as climate change, population pressures, urban congestion, and social and economic inequality (Torfing & Ansell, 2017).

The most important factor to be considered for enhancing creativity, innovation and entrepreneurship is intrinsic motivation (Barroso-Tanoira, 2017). Intrinsic motivation has been theorized to be a key ingredient for creativity (Amabile, 1996). Additionally, research showed the positive relation between intrinsic motivation and creativity was stronger especially, when prosocial motivation was higher (Grant & Berry, 2011). Motivation consists of two types intrinsic and extrinsic, and intrinsic motivation appears to guide creativity, while extrinsic motivation has no such effect on attitudinal motivation related to employees' creativity (Pascual & Galende, 2017). Accordingly, this study will address the intrinsic motivation that comes from within the employee, as it is the type that affects creativity more than the extrinsic motivation that comes from more external material incentives.

Generally, the public sector has been criticized for being unfavorable to innovation due to inadequate motivations, a shortage of an innovation culture, insufficient funding (such as venture capital) for innovation, and a variety of other obstacles (Bekkers et al., 2013). There is significant policy concern about how to inspire innovation in the public sector to increase resource efficiency and public service quality and solve a wide variety of societal challenges such as climate change, population pressures, urban congestion, and social and economic inequality (Torfing and Ansell, 2017). Despite that, motivation by employees of public sector organizations increases innovation potential (Demircioglu & Audretsch, 2017).

According to the research, organizational or workplace culture for innovation has a key role in either supporting or preventing public sector innovation (Albury, 2005; Laegreid et al., 2011). An "innovation culture" is defined as a culture in which a set of values, practices, and expectations are shared by people that motivate them to create new ideas and organizational change (Bason, 2010). Innovation does not occur in a vacuum; it necessitates effective techniques and systems, with motivation playing a critical role. Creativity thrives in organizations that encourage open thinking, and these organizations foster cultures that inspire employees and develop innovative workplaces. Those that fail may be huge organizations that restrict creativity with rules and do not allow for change. To encourage an innovation culture in public sector organizations and to provide certain indicators or criteria that managers of public sector organizations may use to boost innovation in their systems, there has to be a shared awareness of specific concerns relevant to innovation.

Through studies, it is not easy to create an environment for the work of creative activities because the creator must work under pressure, control the atmosphere surrounding the environment continuously, and work with great difficulty many times to build a good environment that provides opportunities to maintain the necessary motivation to carry out creative activities (Wallace, 1989).

Researcher Garner's study describes distinctively how the environment affects the creativity of the creators, where he says that people are children of their environment and explains that the individuals who were contemporary and influenced by Western European civilization had resulted from the environment suitable for creativity at that time, so we should not comment on the achievements of the talented only, but rather it is necessary to praise the eras that shaped them to be creative (Gardner, 1993). Gardner describes that space and

time play a major role in the formation of the creative individual. For example, many followers, such as Picasso and Stravinsky, knew each other and worked together, as well as Einstein and Freud, who corresponded with each other in letters during the war. The families of these creators were supportive environments for their creative children, as they helped them from their inception to overcome difficult circumstances to fulfill their desires and feel satisfied (Gardner, 1993).

Also, high and middle management motivation to innovate is a significant element in public sector innovation, and it is narrowly connected to the individual and professional growth that results from successful innovations (Halvorsen et al., 2005). The level of support, leadership, and expertise of top managers for innovation, as well as the attitudes of both management and other employees toward risk and change, are indicators of innovation. culture measurement should include steps to encourage creativity and learning among public sector employees, as well as rewards and incentives for employees who suggest ideas for innovation and engage in their development. In less dominant organizations and systems, innovators frequently succeed. However, public services are still unable to learn lessons from more successful techniques (Moussa et al., 2018).

Since it improves employees' creative performance, leaders in the public sector should be keen to foster an environment that encourages innovation. They should also work to transform or modify employees' mental and psychological perceptions of their workplace (Barbara et al., 2020). The connection between the government and the managerial members of the public service is determined by governance. These two parts of the government face particular challenges and motives, leading to various sorts of innovations.

Leadership has been known as one of the most important variables that affect employees' work environments and is essential for achieving both individual and organizational effectiveness and innovation (Engelen et al., 2014; Wang et al., 2013). According to Shin and Zhou (2003) and Kahai et al. (2003), transformational leadership is seen as encouraging idea production. According to Kahai et al. (2003), a transformational leadership approach can help managers inspire their employees to use greater creativity and innovation in problem-solving and to reach their full potential (De Jong & Den Hartog, 2007).

Gumusluoglu & Ilsev (2009) claim that this leadership strategy comprises behaviors that foster innovation. McMurray et al. (2012) claim that transformational leaders try to persuade their employees of the importance of their vision. According to Shin & Zhou's 2003 research, transformational leadership and employees' creativity are positively correlated. The surprise result of Osborn and Marion's (2009) empirical investigation into the relationship between leadership style and innovation in American and Japanese research-intensive industries was that transformational leadership was strongly linked to lower innovation.

On the other hand, transformational leadership and creativity-relevant procedures and outcomes were found to be adversely correlated by Kahai et al. (2003). A negative correlation between transformational leadership and creativity was observed in other research as well (Sosik et al., 1998; Wang & Rode, 2010). Organizations become powerful and innovative when leaders are involved with their employees (Kesting & Ulhi, 2010).

According to Reiter-Palmon and Illies (2004), it is nearly impossible to achieve creative output without significant support from leaders. Other leadership models that have a positive impact on creativity and innovation are

participative leadership style (Somech, 2006) and empowering leadership (Ahearne et al., 2005). According to empirical research (Amabile, 1988; Oldham & Cummings, 1996; Woodman & Griffin, 1993), supervisor support is a crucial part of the creative process. The conduct of a company's executives will also affect how its employees behave. Leaders who don't foster a culture of trust in the discussion of ideas will soon be forced to deal with a painfully opposing culture of risk-taking. The most innovative employees in a company that lacks a culture of open communication, cooperation, and teamwork will also frequently leave the company at the next stage (Cankar & Petkovšek, 2013).

As a warning, people may be cautious about taking initiative even when they are given considerable authority when the organizational climate encourages dependability and efficiency rather than creativity and innovation (Yukl, 2010). A "creative climate was viewed as a strategy that was favorable to creative ideas and promoted by proper incentive mechanisms (Tidd et al., 2001).

The lack of profit motivation in most public sector organizations is a fundamental gap in innovation drivers. Furthermore, several of the Oslo Manual themes contain operations that are unimportant to public-sector organizations, such as R&D, engineering, and intellectual property acquisition. These three activities are less significant in the public sector due to a concentration on services and a lack of internal technology innovation skills (Earl, 2004).

A high-technology company's employees may be more motivated to perform better if they produce a large number of innovations and innovative goods, while stockholders may be more motivated if these items are sold and generate profits (Makri et al., 2006). Additionally, in any form of organization, confidence (i.e., institutional confidence, such as confidence in the company's goals and

strategy, and vertical and lateral confidence between employees and colleagues) may increase employee incentive to meet organizational goals and employee innovation (Ellonen et al., 2008). Organizations that motivate staff to enhance organizational performance by developing a desire to do so and fostering a sense of confidence will have more innovative organizational members who can come up with new and original ideas that they "create internally" or "find externally" (Makri et al., 2006). Whereas the desire to reach more consumers and gain profits motivates people to improve their performance in the private sector (Christensen et al., 2004), additional motivations inspire people to enhance their performance in the public sector. Wise's (1999) findings on public sector managers engaged in innovation and reforms, for example, explore internal, non-monetary, employee-focused factors that influence innovative and creative drivers among public sector employees.

Also, individual motivation, corporate culture, and the scale of the task for employees all have an impact on innovative or creative activity. If an organization's plan aligns with desired results (e.g., innovation in the APS), organizations and organizational leaders engage employees to assist in accomplishing the organization's goals and inspire employees to be more innovative. Indeed, public managers in the Australian public service are supposed to support creativity and innovation, and organizations are expected to drive staff to create changes and inspire them to achieve their best in their jobs (APSC, 2011).

Likewise, Sahni et al. (2013) argue that how organizations encourage people to realize the objective of their work and perform their best may motivate employees in public sector organizations. They give a clear example of how motivation to enhance performance may lead to increased innovation:

The motivation to increase performance in Washington, D.C., was twofold. First, municipal leaders viewed mobile payment services as a method to collect savings and raise income, reducing the city's financial burden. Another important motivation for municipal innovators was the desire to be seen as forward-thinking. At the time of the initiative, Adrian Fenty, the mayor of Washington, D.C., was known to encourage this tendency in his managers. Inside the government, innovators understood they would be recognized for their innovative solutions with a public award that offered tremendous non-monetary motivation (Sahni et al., 2013). Thus, when personnel in the public sector are motivated to create changes, they can innovate.

Although individual motivating factors for innovation in the private and public sectors may differ from those of the organization as a whole, several individual factors are also important for organizations. For instance, career concerns, idealism, professional recognition, authority, self-fulfillment, and funds may motivate individuals in the public sector to innovate. On the contrary, career, idealism, self-fulfillment, money, power, and job stability are some of the driving forces for people in the private sector that are comparable to those affecting people in the public sector (Bloch, 2011). Thus, if the motivation of the employees of public sector organizations increases, the potential for innovation increases (Demircioglu & Audretsch, 2017).

I conclude from all the results of previous studies that the motivation for creativity and innovation drivers stems from several important elements, such as innovative culture, the level of management support, the creative environment, leadership, the expertise of managers for innovation, producing many innovative products, trust, non-monetary individual motivation, corporate culture, and the scale of the task for employees, all of which have an impact on motivation. All of

these various elements are considered intrinsic motivation that has a positive relationship with creativity (Grant & Berry, 2011) and has more influence than extrinsic motivation (Pascual & Galende, 2017).

Thus, this leads to the following hypothesis as follows:

H3: Motivation has a significant positive impact on creativity and innovation in public sector organizations.

2.4.4. Learning:

The drivers that are critical to public sector innovation are only briefly mentioned in the Oslo Manual, and this calls for the need to expand the search for these drivers more, especially through learning, which will be addressed in this study. Knowledge is a key component for creativity (Amabile, 1996). Innovation is based on a learning process that relies on multiple inputs and requires continuous problem-solving (Nelson, 1993; OCED, 1997). These activities involve gathering information from other public sector organizations and collaborating with them (Sorensen & Torfing, 2012); managerial skills (Audit Commission, 2007; Pärna & von Tunzelmann, 2007); and managerial traits like educational attainment, prior work expertise in the private sector, and risk-taking tendencies (Damanpour & Schneider, 2006).

Measurement should include the usage of a variety of competencies and instruments for innovation, such as acts to incentivize learning and creativity by public sector employees; employees who suggest and contribute to the creation of creative ideas should be rewarded; training and the use of innovation groups;

collaboration; risk-management methods; and the development of public services through co-creation with prospective customers. Similarly, when employees have a choice and know how to execute their work, they may enhance their abilities and be more innovative. Individuals may also gain various knowledge and capabilities through continual learning by attending training courses and workshops, as well as receiving useful advice from colleagues and others who have expertise in their specialist job. Experts implement whatever they learn on the job and have a major influence on an organization (Arundela et al., 2019).

De Bono stresses in a study on students that teaching creativity and deep thinking should be offered to all students of different mental abilities and is not limited to gifted students. He also says that the creativity of a student with normal abilities who has been taught and trained with the skills and tools of creativity is better than that of a student with high abilities who has not been trained (De Bono, 1976). To demonstrate the importance of learning, especially continuous learning, consider the computer programmer, who must continuously seek out, study, and use new technologies in the development of new programs. In addition, the manager of international marketing for a consumer brand organization that travels the world to establish new businesses focuses on learning other languages, gathering knowledge about diverse cultural backgrounds, and modifying the data as new initiatives grow and expand. The nature of business is ever-changing. Jobs are increasingly being done in task teams. For example, roles are structured into tasks rather than functions; technological improvements must be brought into the organization; and performance requirements have become more complex and challenging (Ilgen & Pulakos, 1997).

Nevertheless, most employees are assigned tasks that do not require the application of newly acquired skills (Ford, Quinones, Sego, & Sorra, 1992).

According to (Gurdy et al., 1994; Sitkin, 1991), failures are expected via training and rapid implementation when employees try to conduct creative ideas and talents, but activities are carefully allocated in certain organizations to reduce the potential for failures and never to encourage learning.

Some scientific research findings indicate that learning organizations have a significant positive impact on both job satisfaction (Chang & Lee, 2007; Dirani, 2009; Egan et al., 2004) and individual performance (Davis & Daley, 2008; Ellinger et al., 2002; Wilde, 2009). According to research, a learning organization is favorably associated with knowledge-related challenges in an organization. Innovation (Ismail, 2005; Sta Maria, 2003; Sta Maria and Watkins, 2003), knowledge production (Song, 2008), organizational learning processes (Song et al., 2011), and knowledge transfer are examples of knowledge-related difficulties (Hernandez and Watkins, 2003).

As a result, I believe that establishing a learning culture will have an impact on performance innovation (Watkins & Marsick, 1996). Managers have been shown to play a critical role in a company's transformation into a learning organization (Ellinger et al., 1999; McGill et al., 1992; Ulrich et al., 1993). Generative learning may occur in an organization where management allows employees to be open and creative while maintaining a sense of efficacy (McGill et al., 1992). The key feature of a learning organization is continuous learning, which enables it to continuously transform (Watkins and Marsick, 1993). Furthermore, learning creates a consistent environment for performance (March 1991). According to Marsick and Watkins (1999), organizations may foster a learning culture by providing continuous learning opportunities and having leaders who value learning.

If certain changes improve organizations' capacity to compete and eventually their survival, it may be assumed that learning is important in achieving organizational performance and that supporting continuous learning would improve this performance toward innovation. Becoming a learning organization has a positive correlation with issues related to improving individual jobs and careers. It improves job satisfaction (Dirani, 2009; Egan et al., 2004; Wang, 2007); individuals' subjective career success and multifaceted careers (Park, 2009); career resilience (Abu-Tineh, 2011); career advancement (Parsa et al., 2014); and job performance (Dekoulou & Trivellas, 2015). Gieske, Buuren, and Bekkers (2016) made a distinction between connecting ability, ambidextrous ability, and learning ability as three categories of innovative ability that it may be used to assess the creative potential of public sector organizations.

Marsick & Watkins (2003) believe that learning culture is surrounded by people's minds and souls and that these aspects of learning organization (continuous training, team learning, motivation, and the fostering of dialog and inquiry) are very important for the advancement of learning. The authors define the promoted dialogue and inquiry dimension as people achieving successful analytical skills to state their thoughts and the ability to communicate and investigate certain people's opinions; culture is altered to promote questioning, feedback, and experimentation. Also, dialog and inquiry mediate a team-level aspect between continuous learning and team learning (Jyothibabu et al., 2010). To promote discussion and the concept of inquiry within the company, employees should provide open and honest effort to each other, express their views as well as ask what others think, and also spend lots of time building trust with each other (Leufvén et al., 2015). The discipline of dialogue is fundamental to learning

organizations because it maintains commitment as a means to promote mutual thinking.

To achieve superior organizational performance in the organization, the learning organization model must be adopted in their daily work (Fang and Wang, 2006). Greek advertising companies are required to place great emphasis on advancing organizational learning for their employees as a recipe for improving individual and organizational performance (Chang & Lee, 2007). Applying the learning organization model not only enriches employees' individual knowledge, but also enhances their commitment to organizational goals, and increases their productivity and performance (Bhatnagar, 2007). Learning organization could be described as an organization that regularly creates, disseminates and integrates knowledge, transforms itself and modifies its action based on new knowledge, perceptions and experience in order to meet its strategic objectives (Lewis, 2002).

Watkins & Marsick (1993) detect the following seven distinct learning organization dimensions: continuous learning, inquiry and dialogue, team training, embedded system, empowerment, system connection: strategic leadership. The learning organization will therefore be the main learning type examined in this study. The learning organization is presented in the literature as an ideal state a desired state towards which organizations should aim. Hence, organizational learning is the activity and process through which organizations can ultimately reach the ideal state of being a learning organization. This set of propositions suggests that organizational learning is a means, and the learning organization is an end (Schwartz & Rist, 2017). This is achieved as a result of learning across the entire organization. A learning company is an organization that facilitates training for all its members and continually transforms itself (Pedler, Burgoyne, and Boydell, 1991). Here, it has shown the definition, importance and dimensions of

learning organization technique (through training) in enhancing the creativity and innovation and improved employees performance in organizations. Training is one of the means of achieving learning, while learning is only one of the factors that enable performance. The effect of training as one of the learning organization means (Watkins & Marsick, 1993) will be measured in this study, as stated in the questionnaire questions.

Thus, the hypothesis can be stated as follows:

H4: Learning (learning organization) has a significant positive impact on creativity and innovation in public sector organizations.

2.4.5. Responding to low performers:

Although both organizations and managers promote and even reward more innovative employees, there are always employees who perform badly and do not innovate. Employees who perform poorly but are not treated properly by the company or their management may have a negative effect on other employees who would otherwise be performing well. Poor performers among the employees may have a negative effect on their colleagues' conduct and output. For poor performers to improve in this area, managers may offer incentives or guidelines. Numerous studies (Futrell & Parasuraman, 1984; Keller, 1984; Spencer and Steers, 1981) have shown that turnover of low performers may benefit companies and other employees since it increases the job satisfaction of regular or high-performing employees. According to LePine and Dyne (2001), if employees lack competence and experience, the organization can assist them through training. However, personnel with low conscientiousness may be dealt with by inspiring low-

experienced employees and rejecting (e.g., firing) high-experienced employees. Thus, depending on the scenario, organizations and managers can respond to low performers in a variety of ways, which has an impact on innovative activities.

The incentive and support for such employees whose performances are outstanding will be reduced if all employees are treated equally regardless of their performance, and high performers won't feel that they are being treated fairly. If managers and organizations can enhance underperforming personnel (e.g., through incentives or pressure), other employees will feel obligated to do a good job. Indeed, Verhoest et al. (2007) suggest that "pressure is required." Pressure may be produced internally in the public sector through rigorous performance standards. Sanctions and incentives operate as incentives for performance and, as a requirement for performance, as a condition for innovation (Verhoest et al. 2007). Finally, according to the Australian Public Service Commission study, "innovation is often viewed in terms of the introduction of new ideas or processes; nevertheless, an essential implication is that innovation may also take the form of eliminating old or superfluous procedures" (APSC, 2011). Also, responding to low performance by employees of public sector organizations increases the potential for innovative activity (Demircioglu & Audretsch, 2017). According to de Vries et al. (2014), the most common reason for innovation is to improve performance, which is measured in terms of effectiveness and efficiency.

Thus, the hypothesis can be stated as follows:

H5: Responding to low performers has a significant positive impact on creativity and innovation in public sector organizations.

2.4.6. Budget constrains:

Organizations in the public sector may be under pressure to innovate for a number of reasons, ranging from public demand for new or enhanced services to financial restrictions (Walker, 2006; Hartley et al., 2013). Likewise, factors such as the availability of skills or financing may operate as barriers to innovation if they are absent. Managers in the public sector can give nominal (yes or no) data for various innovative initiatives, but they seldom collect data on expenditures and, as a result, are unable to report expenses with an appropriate level of precision (Bugge et al., 2011). Although there are similar concerns about a shortage of resources, the public sector may indeed face a number of significant obstacles not covered in the Oslo Manual, such as personnel resistance, a negative innovation culture, and risk revulsion (Earl, 2004).

The scarcity of resources is often regarded as influencing innovative activity. Prominent public management changes, such as the New Public Management (NPM), have forced governments to perform more with less (Farazmand, 1999; Kettl, 2005; Pollitt, 2010), which can boost not just efficiency but also innovation. Similarly, many experts feel that public-sector employees might be more innovative if they were expected to perform the same responsibilities on a smaller budget (Osborne & Gaebler, 1992; Osborne & Plastrik, 1997). According to Bernier (2001), "More now than ever before, innovations are becoming important." According to Glor (2001), "often innovation is led or influenced by central budget reductions." Therefore, higher budget cuts would be associated with higher innovation since employees must be more innovative when asked to do more or the same with a lower budget. According to Sahni et al. (2013), budget constraints in Philadelphia, Boston, Hampton, Virginia,

Indianapolis, and Washington, D.C. have resulted in significant innovations (e.g., through the Parkmobile and Citizens Connect projects).

However, research has shown that greater budgets, rather than restricted budgets, are more able to encourage an innovative workplace culture and, consequently, innovation (Wynen et al., 2014). Indeed, greater budgetary and resource support is viewed as essential for innovation in the federal government of the United States (Dawson & Denford, 2015). Similarly, Bernier and Hafsi (2007) conclude, "Public sector organizations perform better when resources from an organizational and political environment can be secured" (Bernier & Hafsi 2007, 500). Furthermore, because of their larger budgets and greater power, larger organizations are more likely to be innovative.

Laegreid et al. (2011), on the other hand, find no correlation between budget size and an innovation-oriented culture in organizations in Norway and Flanders. Whereas need and budget cuts stimulate innovation, they also have the effect of preventing it (Fernandez and Wise, 2010). As a result, numerous academics believe that budget constraints may not necessarily promote innovation. It is apparent that key barriers such as lack of resources and workplace politics negatively influence innovation in the public sector (Moussa et al., 2018). In addition, budget constraints do not have any statistical effect on public sector employees' innovation (Demircioglu & Audretsch, 2017).

This part concludes that budget constraints may affect the occurrence of innovation and creativity, whether positively or negatively, and may not affect it at all, and the tendency will be to the first opinion that it positively affects their occurrence, even if by a small percentage.

Thus, the hypothesis can be stated as follows:

H6: Budget constrains has a significant positive impact on creativity and innovation in public sector organizations.

Chapter three: Methodology and procedures

3.1. Introduction:

This chapter describes the methodology used in this research to accomplish the objectives of measuring the drivers related to creativity and innovation in the Bahraini public sector. These drivers include experimentation, feedback, motivation, learning, responding to low performers, and budget constraints.

De Vries et al. (2016) urged new survey methods in the study field of public sector innovation in their recent review. In response to that call, this study uses survey data to experimentally and quantitatively investigate the creativity and innovation in the public sector. Data for this study was collected especially from some public sector organizations which are focused on innovative and creative work and that have the desire and ability to work in this field.

The primary data was gathered using surveys to gather the resources required to test the hypotheses and arrive at a conclusion. The secondary data was gathered using scientific journals, agencies for research, and papers for strategic advice services. The chapter also establishes the research population and sample size, followed by the instruments utilized for data collection and analysis.

3.2 Research Design:

The distribution of questionnaires will be the most appropriate, fastest, and most effective way to get the opinions of public sector employees in

this study through the WhatsApp application and e-mail. This means that the answers of public sector employees will be used to achieve the three objectives required for this study, while the answers of employees from the private sector will be used to achieve only one goal.

The questionnaire will be distributed to some employees of the private sector to present a comparison of creativity and innovation drivers between the public and private sectors. The questionnaire will be accurate and brief on the drivers affecting creativity and innovation. This study will focus on distributing the questionnaires on various social networking sites to get the largest possible number of respondents and show a clear and tangible result of this survey. In this study, I will use the questionnaire in the study (Demircioglu & Audretsch, 2017) with many changes in the wording of the questions in line with this study, in addition to developing other questions and adding a learning questions section (Appendix A). In addition, I will make the questionnaire available in both English and Arabic to make it easier for the majority of respondents to answer it.

The data in this study is believed to assist Bahraini public sector managers and executives in formulating specific and quantifiable plans to increase innovation. The survey approach is a technique that emphasizes quantitative analysis. It involves gathering information from a lot of different organizations using tools like questionnaires and then utilizing statistical tools to evaluate that data.

In order to encourage answers to be as honest as possible, the questionnaire was fully anonymous. The respondents were given the assurance that all of their responses would be kept in complete secrecy and utilized exclusively for this study. The survey employed multiple-choice and Likert scale forms and

was divided into two main sections, including personnel and organizational information and the seven variable questions. Probability sampling by using the convenient sampling technique. In the current study the population of both public and private organizations in Bahrain are unknown, in this case, according to Krejcie and Morgan (1970) and by utilizing (<https://www.surveysystem.com/sscalc.htm>) the sample size is 385 and this number is close to the number of respondents for this study.

At the end of this study, the resources will be provided in the manner of APA (Sixth Edition), according to the requirements of the work of this study. In the appendices, the questionnaire was provided through the survey covering letter, then the personal and organizational data, and then the second section of the questionnaire questions for this study. The approval of the responsible authorities for organizations in the public sector has been taken to carry out this survey and the information that will be collected will be very useful to the organizations and will be used for research purposes only.

3.3. Research framework:

This chapter provides two frameworks. The first one is a theoretical overview of the creativity and innovation, broken down into many drivers with appropriate documentation in mind. The chapter provides an overview of the theories and theoretical models related to the research problem, arranged according to the topics or variables of the study, followed by writing the literature review in coherent and clear paragraphs. Figure 1 shows the conceptual model of the study. These six factors (Independent Variables) will clarify the creativity and innovation

(Dependent Variable). Then, I will show the sampling frame for this study, which briefly explains the respondents' answers and the most important results.

Theoretical Framework:

This theoretical framework is developed based on the some studies such as (Demircioglu & Audretsch, 2017; Serrat, 2017; Anderson et al., 2014).

IV (Independent Variables)

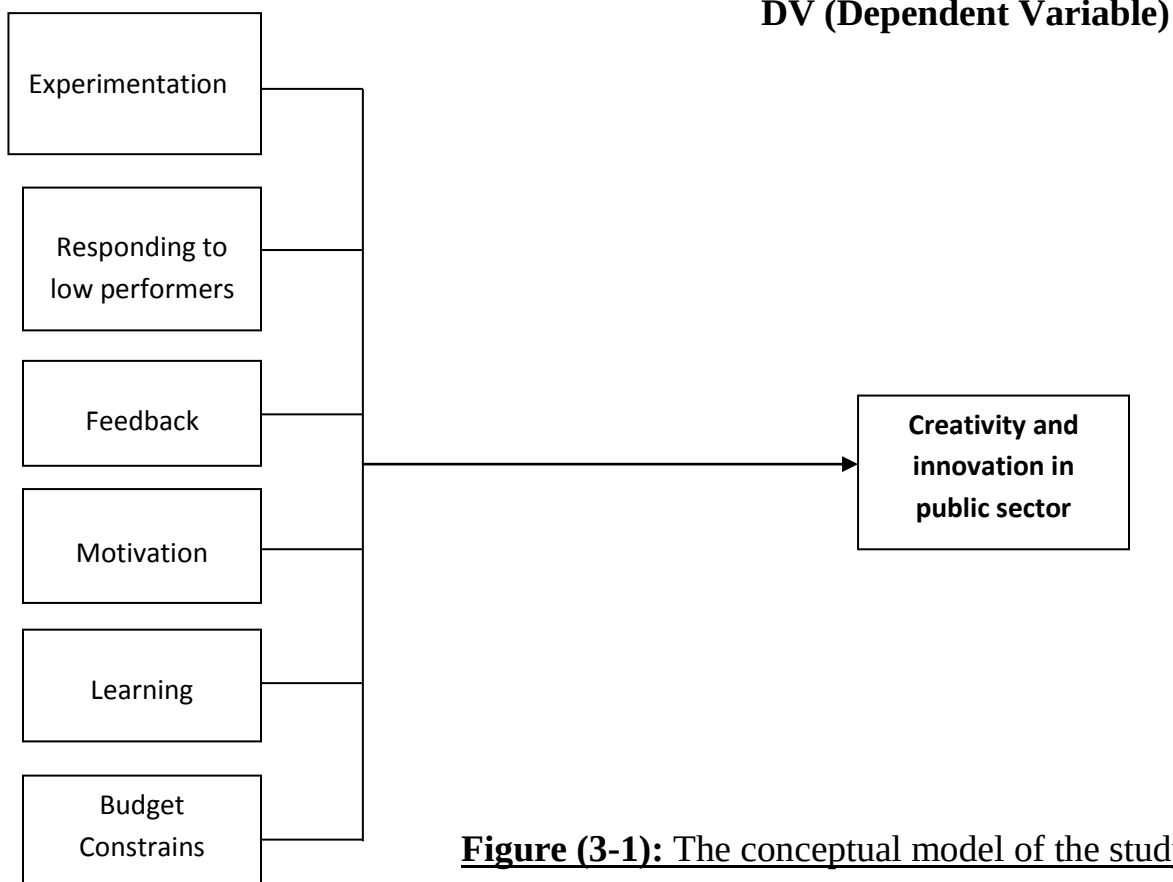
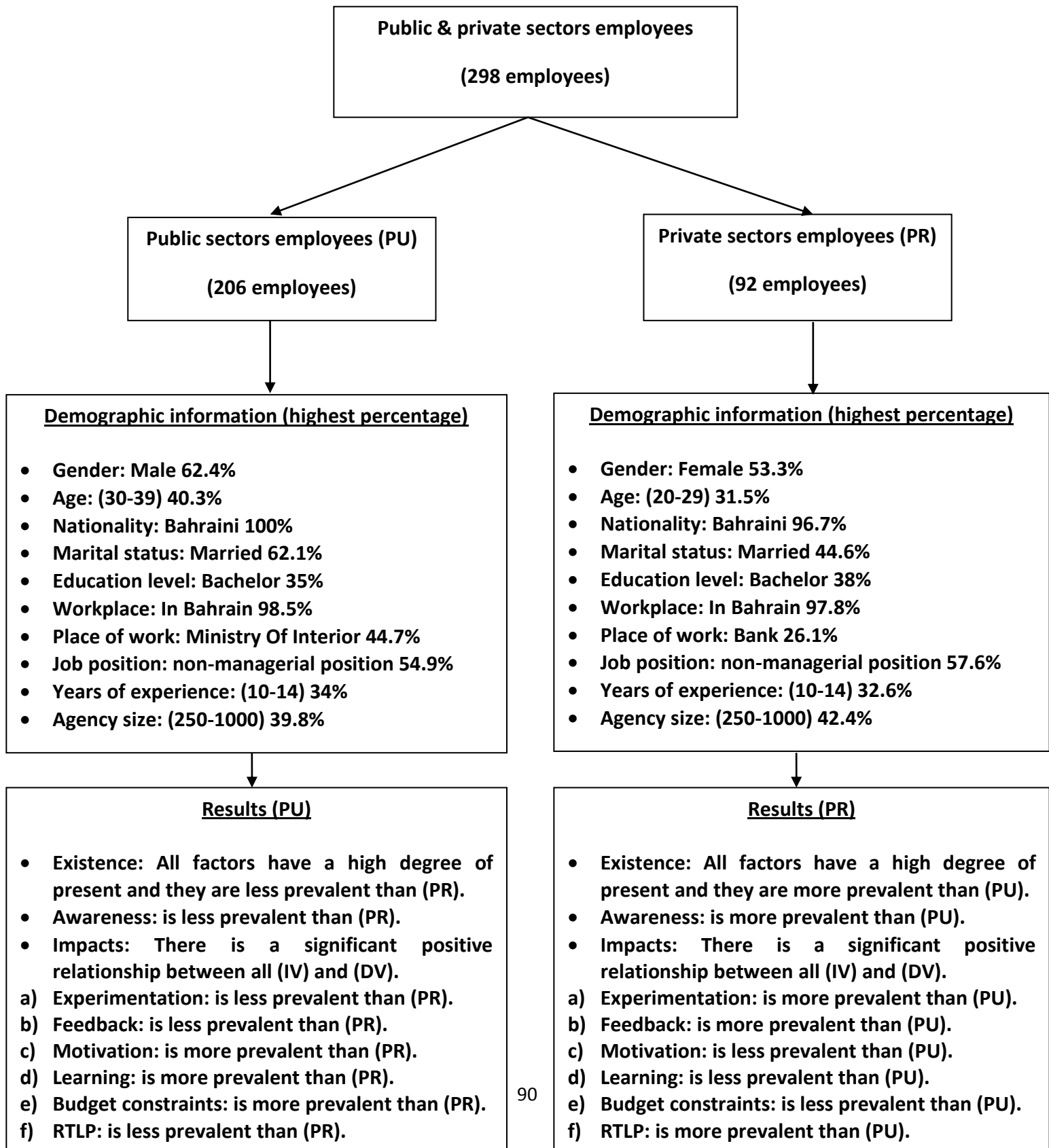


Figure (3-1): The conceptual model of the study

The sampling frame:



3.4. Research variables

The variables of this study are categorized into independent and dependent variables as shown in Figure 3.1:

a) **Independent Variables:** Among the main potential sources of awareness six categories or main variables associating to Bahraini public sector creativity and innovation. These variables include experimentation, feedback, motivation, learning, responding to low performer and budget constraints.

b) **Dependent Variable:** the dependent variable for this research is creativity and innovation.

3.5. Research Hypotheses:

Based on the questions and objectives of this research, the following hypotheses were formulated hypothesis as follows:

H1: Experimentation has a significant positive impact on creativity and innovation in public sector organizations.

H2: Feedback has a significant positive impact on creativity and innovation in public sector organizations.

H3: Motivation has a significant positive impact on creativity and innovation in public sector organizations.

H4: Learning has a significant positive impact on creativity and innovation in public sector organizations.

H5: Responding to low performers has a significant positive impact on creativity and innovation in public sector organizations.

H6: Budget constrains has a significant positive impact on creativity and innovation in public sector organizations.

3.6. Research Instruments:

Five intervals of scale were used to interpret the respondent's degree of agreement. I will use (Likert Scale of Agreement) to answer the questions in the survey. A five level Likert scales was used to collect data from the respondents (Strongly Agree to Strongly Disagree). The following Table 1.4 shows the rating scale used to measure the degree of agreement (Hair et al., 2011; Al-Bassam, 2018):

1-1.8	1.81-2.6	2.61-3.4	3.41-4.2	4.21-5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Table 1.4: Likert Scale of Agreement

3.7. Data Collection:

The method used to collect the quantitative data was through the distribution of questionnaires to the targeted population, involving employees working in the public sector and some private sector organizations in Bahrain. The questionnaires were designed after thorough research and a thorough review of the literature. The questionnaires (refer to Appendix A) include two sections. The first section includes personnel and organizational data with 13 questions, and the second section contains factors data with 46 questions.

The respondents to this study came from a variety of functional backgrounds, almost from 10 types of jobs, and they worked in headquarters and organizations around the kingdom of Bahrain. This study will conduct a survey of

creativity and innovation organizations to determine their general understanding of the utilization of creativity and innovation principles in their work. The statistical software SPSS will be used to test the hypotheses in this methodology. The level of analysis is the individual employee in a public organization. Only public sector employees are invited to participate in the census, so it is not a random sample. In addition, I will take some answers from private-sector employees in order to compare the two sectors in this context.

I confine the term "public sector" to general government organizations and exclude publicly-owned companies, as is usual practice in management literature. According to the System of National Accounts (SNA), 2008, chapter 22, the public sector is made up of general government (public administration entities at all levels of government, regulatory agencies, and government entities that provide services like security, health, and education). It also includes publicly traded companies. Statistics-based questionnaires can provide an industry- or nationwide overview of the development of numerous innovative drivers, the usage of methodologies to assist innovation, and some types of innovation results.

All survey respondents should be able to understand the drivers of creativity and innovation. Most potential respondents, even those in non-management positions, are likely to understand questions about service and process innovations. Policy innovation was included in Australian innovation surveys and was widely understood by top managers (Arundel and Huber, 2013), but conceptual innovations are more difficult to identify and may be important exclusively to the heads of government organizations.

In this study, questionnaires were distributed electronically via social media and e-mail to respondents from the public sector to a greater extent and then

to private sector employees to a lesser extent for comparison purposes. The period taken to collect the total answers from the respondents, after obtaining approval for that, was 20 days, from Sunday, November 27, 2022, until Friday, December 16, 2022.

3.8. Validity and Reliability of the Questionnaires:

3.8.1. Validity: Validity tests are used to determine if a measurement accurately describes the idea that the researcher is trying to measure. Construct validity is used as a form of validity for this study. Construct validity is about ensuring that the measurement method matches the construct you want to measure. To achieve construct validity, you need to ensure that indicators and measures are carefully developed based on relevant existing knowledge. In this study, the questionnaire includes the relevant questions that measure known drivers of creativity and innovation. The information was prepared so that the sample population could be statistically measured. Through many sources of data and surveys, the validity of the study's survey was confirmed.

3.8.2 Reliability: refers to a study measure's consistency, where a measuring process provides consistent results when used again. To ensure the consistency of the research, the questionnaires were distributed and given to the respondents in the same way. To confirm that the questionnaire was accurate in assessing the expressions, the reliability of the questionnaire and their statements were tested. The most common technique for determining the percentage of variation that is constant across a group of test results is Cronbach's alpha. Its value might be between 0 and 1, with a value of 1 meaning that all deviations are constant (Bonett

et al., 2015). The questionnaire was based on the lowest acceptable value of 0.6, which is considered reliable (Hair et al., 2010).

3.9. Data analysis:

This research depends on questionnaires to extract the data as a Quantitative Data Analysis. The questionnaire for this study was prepared on the Google Form program, and then the detailed tables were extracted from it in the form of tables in the Microsoft Excel program. Microsoft Excel 2013 was used to display, analyze, and make tables using the data. The Statistical Package for Social Science (SPSS) software 22 was utilized by the researcher to examine the data that had been gathered for this investigation. The following analytical and statistical techniques were used:

1. The alpha Cronbach stability coefficient assesses the level of truth of the responses to the questions in the questionnaire.
2. Percentages and frequency distributions for demographic factor analysis.
3. For each statement, the mean, the standard deviation, the frequencies, and the percentages.
4. Use the Pearson correlation coefficient to test for the impact of independent variables on dependent variable.

This chapter analyzes the findings of the quantitative data based on the six factors. The population of this study covers many Bahraini public and private sector organizations, divided into ten types in the questionnaire. It is worth noting that the total number of respondents to the questionnaire of this study will be 302, but two of the respondents were excluded because they did not complete

all the answers in the questionnaire. Also, two of the respondents were excluded from most statistics because they were not in the public or private sectors, and they answered (others) in the field of work, as will be shown in Table 3.7, so the total number of respondents is 298. A total of 298 questionnaires were distributed and administered by the researcher to the individuals who worked in public sector organizations in particular, whether those who have a leadership or management position, or who do not have a manager position, in addition to some respondents from private sector organizations to make some comparisons. The analysis is intended to help decision-makers in public sector organizations to understand the extent to which their employees are aware of the drivers of creativity and innovation, measure the impact of these drivers on work, and know the extent of their willingness to carry them out.

The quantitative analysis in this study is divided into three sections. The first section deals with descriptive analysis, the profile of respondents, general information regarding the organizations, and the degree of awareness of the employees, as well as comments and suggestions from the respondents. There are thirteen classifications for the sample in this study. Then, the second section includes measuring the impact of creativity and innovation drivers in Bahraini organizations as well as making a comparison between public and private employees using some analysis methods. Then, the third section tests the six hypotheses of the study using the Pearson correlation analysis method and explains the relationship of the study factors with the creativity and innovation in public sector organizations.

After conducting the analyses, the value of Cronbach's alpha coefficient for this study was (0.937). This value indicates the high reliability of this study and this is one of the four main analytical methods.

3.9.1. Personal and Organizational Data:

First, in this section, the respondent's demographic information and their organizational data were analyzed. The demographic characteristics of the 298 respondents who answered the questionnaire are categorized into thirteen categories: gender, age, nationality, marital status, educational level, workplace, field of work, place of work, place of work, years of experience, job position, agency size, degree of awareness, and suggested factors. All of these categories are divided into two types: public and private sector employees. The main objective of collecting demographic variables is to gain a basic understanding of the respondent's sample. The results are discussed below:

➤ Gender:

Table 3.1 shows the sample distribution based on the gender and it also illustrated the frequency of the employees. Of course, there were two categories to specify participant gender male or female. The highest percentage of the employees falls into the gender group male, representing 62.4% of the participants, followed by female at 37.6%, divided into two groups, public and private sector employees in the Bahraini organizations. To clarify these figures in the table 3.1 for public and private sector employees who respond to the questionnaire, the percentage of males is higher in public sector employees by

69.4% and represents more than twice as many respondents as females, but the percentage of females is slightly higher than males in the private sector by 53.3% as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
1	Gender	Male	186	62.4%	143	69.4%	43	46.7%
		Female	112	37.6%	63	30.6%	49	53.3%
Total			298	100%	206	69.13%	92	30.87%

Table 3.1: Distribution of the respondents according to Gender

➤ Age:

Table 3.2 shows the distribution of the sample based on age as well as the percentages of employees. There were six categories to specify respondents ages: below 20 years, from 20 to 29 years, from 30 to 39 years, from 40 to 49 years, from 50 to 59 years, and 60 years and above. The highest percentage of the employees falls into the age group of 30-39 years old, representing 35.6% of the participants, followed by those who are 20-29 years old at 27.2%, then those who are 40-49 years old at 22.8%, 9.73% for the ages from 50 to 59, 4% for the group age of 60 years and above, and the last category is for the age group of below 20 years. The age of the majority of respondents working in the public sector ranged between 30 and 39 years, representing 40.3%. As for the private sector, the age of the majority of respondents ranged between 20 and 29 years, with a rate of 31.5%. The lowest age group that responded to the questionnaire in the public and private sectors was 20 years of age or less.

It is also noted that most of those who answered the questionnaire were from the three categories 20–29, 30–39, and 40–49, and together they constitute 85.6% of the population, while the remaining three categories did not exceed 14.4%. This indicates that most of the respondents are from the youth group, who are more empowered at work, know its details due to the presence of interaction and movement, and have some awareness of the existence of creativity and innovation drivers in their organizations.

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
2	Age	below 20	2	0.67%	0	0%	2	2.2%
		20 to 29	81	27.2%	52	25.2%	29	31.5%
		30 to 39	106	35.6%	83	40.3%	23	25%
		40 to 49	68	22.8%	43	20.9%	25	27.2%
		50 to 59	29	9.73%	20	9.7%	9	9.8%
		60 and above	12	4%	8	3.9%	4	4.3%
Total			298	100%	206	69.13%	92	30.87%

Table 3.2: Distribution of the respondents according to Age

➤ Nationality:

The study sample is categorized into two groups on the basis of nationality. Table 3.3 showed that the majority of respondents are 99% Bahrainis, while only 1% are non-Bahrainis. This indicates that most of the respondents to the questionnaire are Bahrainis, working in both public and private sector organizations in Bahrain, as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq	(%)	Freq.	(%)	Freq	(%)
3	Nationality	Bahraini	295	99%	206	100%	89	96.7%
		Non-Bahraini	3	1%	0	0%	3	3.3%
Total			298	100%	206	69.13%	92	30.87%

Table 3.3: Distribution of the respondents according to Nationality

➤ Marital status:

The study sample is categorized into four groups of marital status: married, single, widowed and divorces. Table 3.4 showed that the majority of the respondents, 56.7%, are married, followed by the single, 29.9%, widows, 7%, and divorced, 6.4%. Respondents from the public and private sectors participate in the order, as the married represent the highest percentage, then the single, but they differ in the third and fourth rank, where the widows represent the third rank in the public sector, and the divorced people in the fourth rank, and the opposite happened to the respondents from the private sector, as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq	(%)
4	Marital status	Married	169	56.7%	128	62.1%	41	44.6%
		Single	89	29.9%	55	26.7%	34	37%
		Widowed	21	7%	10	4.9%	11	12%
		Divorced	19	6.4%	13	6.3%	6	6.5%
Total			298	100%	206	69.13%	92	30.87%

Table 3.4: Distribution of the respondents according to Marital status

➤ Education level:

The study sample has been categorized into six educational levels: less than high school, high school, diploma, bachelor, masters, and PhD. Table 3.5 showed that most of the respondents, with a percentage of 35.9%, had a bachelor's degree, while 25.2% had diploma holders, 18.1% had a master's degree, 14.4% had a high school, 5.4% of the participants who had a PhD degree, and 1% who have less than a high school. This is an indication of the high level of education of the respondents because there is more than 84.6% of the respondents who have university degrees, working in both public and private sector organizations in Bahrain, as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
5	Education level	Less than high school	3	1%	2	1%	1	1.1%
		High school	43	14.4%	33	16%	10	10.9%
		Diploma	75	25.2%	51	24.8%	24	26.1%
		Bachelor	107	35.9%	72	35%	35	38%
		Masters	54	18.1%	37	18%	17	18.5%
		PhD	16	5.4%	11	5.3%	5	5.4%
Total			298	100%	206	69.1%	92	30.9%

Table 3.5: Distribution of the respondents according to Education level

➤ Workplace:

The study sample has been classified into two currently workplaces: in Bahrain and outside Bahrain. Table 3.6 explains the distribution of the respondents according to workplace if they are currently working in the kingdom of Bahrain or not. The results show that highest percentages of the respondents 98.3% were working in Bahraini organizations whether public or private sector, while 1.7% of the respondents were not working currently in Bahrain. In this regard, the answers of respondents who do not currently work in Bahrain will be accepted because they had previously worked in Bahrain's organizations, whether in the public or private sector, and they have sufficient knowledge to answer the questionnaire questions, as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
6	Workplace	In Bahrain	293	98.3%	203	98.5%	90	97.8%
		Outside Bahraini	5	1.7%	3	1.5%	2	2.2%
Total			298	100%	206	69.1%	92	30.9%

Table 3.6: Distribution of the respondents according to workplace

➤ Field of work:

Table 3.7 shows the distribution of respondents by field of work and shows that the highest percentage of respondents, 68.67%, were employed in the public sector, equivalent to more than twice the number of respondents from the private sector, followed by 30.67% of respondents from the private sector, and 0.66% of respondents from other fields. The answers of the respondents who

answered the third option (others) were omitted because they did not include the target sample for this study, which includes only the public and private sectors. Accordingly, the percentage of respondents from the public and private sectors in all other classifications will change as follows, in order: 69.13% and 30.87%, for a total of 298. It is natural that the number of respondents from the public sector is higher because it is the primary segment on which the study will be based. As for the private sector, their presence in the study is for comparison purposes only with the public sector in order to know the real situation of the public sector.

Category		Details	Frequency	Percentage
7	Field of work	Public sector	206	68.67%
		Private sector	92	30.67%
		Others	2	0.66%
Total			300	100%

Table 3.7: Distribution of the respondents according to field of work

➤ Place of work:

The study sample has been categorized into ten places of work. Here, the proportions of places of work will be mentioned in descending order from the highest percentage to the lowest. Table 3.8 shows that the highest percentage of respondents, 31.2%, were working in the Ministry of the Interior. For this reason, the Ministry of Interior was separated from other military institutions, although they are all considered to be in the military sectors. Other military institutions have a percentage of 14.1%, education employees have a percentage of 13.8%, 9.7% are working in the field of health, 9.4% are working in the field of business, 9.1% work in the field of a bank, then 8% in industry, 3.7% are working in other fields,

3% in communication, and 2% in the judiciary. The highest percentage of respondents from the public sector answered in their place of work (Ministry of Interior) with a rate of 44.7%, while the lowest was in the industrial sector with a rate of 1%. While the highest percentage of respondents from the private sector (bank) was 26.1%, the lowest was the judiciary or law sector at 1.1%.

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
8	Place of work	Ministry of interior	93	31.2%	92	44.7%	1	1.1%
		Other military institutions	42	14.1%	39	18.9%	3	3.3%
		Business	28	9.4%	7	3.4%	21	22.8%
		Health	29	9.7%	19	9.2%	10	10.9%
		Bank	27	9.1%	3	1.5%	24	26.1%
		Education	41	13.8%	26	12.6%	15	16.3%
		Industry	12	4%	2	1%	10	10.9%
		Judiciary	6	2%	5	2.4%	1	1.1%
		Communication	9	3%	4	1.9%	5	5.4%
		Others	11	3.7%	9	4.4%	2	2.2%
Total			298	100%	206	69.1%	92	30.9%

Table 3.8: Distribution of the respondents according to place of work

➤ Years of experience:

The study sample has been categorized into six categories of experience: less than 5 years, 5–9 years, 10–14 years, 15–19 years, 20 years and more, and retired. Table 3.9 demonstrated that the highest percentages of the

respondents (33.6%) were working between 10 and 14 years, then the respondents were working 5–9 years at 23.5%, then 15–19 years represented 19.8%, then 20 years and more represented 12.1% of respondents, then less than 5 years had a percentage of 6%, and retired employees had a percentage of 5%. The highest percentage of respondents were in both the public and private sectors based on years of experience (10–14 years) at a rate of 44.7% for the public sector and 34% for the private sector. Those with less than five years of experience in the public sector earn the least, at a rate of 6%. While the lowest in the private sector are retirees at 4.3%.

Category		Details (years)	Total		Public sector		Private sector	
			Freq	(%)	Freq.	(%)	Freq.	(%)
9	Years of experience	Less than 5	18	6%	9	4.4%	9	9.8%
		5 – 9	70	23.5%	50	24.3%	20	21.7%
		10 -14	100	33.6%	70	34%	30	32.6%
		15 – 19	59	19.8%	41	19.9%	18	19.6%
		20 and more	36	12.1%	25	12.1%	11	12%
		Retired	15	5%	11	5.3%	4	4.3%
Total			298	100%	206	69.1%	92	30.9%

Table 3.9: Distribution of the respondents according to years of experience

➤ Job position:

The study sample has been categorized into two job positions: managerial positions and non-managerial positions. Table 3.10 shows that 44.3% of the respondents have managerial positions, while 55.7% do not. The highest

percentage of respondents was in both the public and private sectors based on the job position (non-managerial position), with 54.9% for the public sector and 57.6% for the private sector, as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq	(%)	Freq.	(%)	Freq.	(%)
10	Job position	Managerial position	132	44.3%	93	45.1%	39	42.4%
		non-Managerial position	166	55.7%	113	54.9%	53	57.6%
Total			298	100%	206	69.1%	92	30.9%

Table 3.10: Distribution of the respondents according to job position

➤ Agency size:

Respondents were requested to report the number of employees in their agencies in order to estimate the size of the agency. As shown in Table 3.11, agency sizes are divided into three categories. The highest percentages of the respondents (40.6%) were working in medium agencies (251–1000 employees), 30.2% were working in large agencies (above 1000 employees), and the lowest category was 29.2%, and they were working in small agencies (less than 250 employees). Both public and private sector employees, based on agency size, have the same rank in the general total of the previous respondents.

Category		Details (employee)	Total		Public sector		Private sector	
			Freq	(%)	Freq	(%)	Freq	(%)
11	Agency	Less than 250	90	30.2%	54	26.2%	36	39.1%

	size	250 – 1000	121	40.6%	82	39.8%	39	42.4%
		More than 1000	87	29.2%	70	34%	17	18.5%
Total			298	100%	206	69.1%	92	30.9%

Table 3.11: Distribution of the respondents according to agency size

➤ Degree of awareness:

Here, the respondents are required to determine the degree of their observation of creativity and innovation drivers in their organizations in order to measure the degree of awareness of these drivers. The study sample has been categorized into eleven degrees of awareness. The degree of awareness of zero means that the employee does not fully understand and is unaware of the drivers of creativity and innovation, and this degree of awareness will not enter into the study because the employee who is completely unaware of these drivers will not respond to the details of the drivers. While a degree of awareness of 10 means that the employee is fully aware of all these drivers in his or her organization. The awareness scale will be from 0 to 10, and the higher the awareness rate, the higher the number, and vice versa. Table 3.10 shows the details of the answers, where the highest level of awareness among the employees was 10, which constituted 21.5%. Fortunately, none of the respondents answered level of awareness No. 0, and this indicates that all respondents are aware to varying degrees of creativity and innovation drivers in their organization. It also indicates the accuracy of the selection of respondents to answer the questions of this questionnaire, and all respondents will be accepted. as shown in the table below:

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
12	Degree of awareness	0	0	0%	0	0%	0	0%
		1	9	3%	7	3.4%	2	2.2%
		2	9	3%	7	3.4%	2	2.2%
		3	11	3.8%	8	3.9%	3	3.3%
		4	15	5%	7	3.4%	8	8.7%
		5	40	13.4%	23	11.2%	17	18.5%
		6	34	11.4%	25	12.1%	9	9.8%
		7	40	13.4%	38	18.4%	2	2.2%
		8	37	12.4%	27	13.1%	10	10.9%
		9	39	13.1%	22	10.7%	17	18.5%
		10	64	21.5%	42	20.4%	22	23.9%
Total			298	100%	206	69.1%	92	30.9%

Table 3.12: Distribution of the respondents according to the degree of awareness

It was also shown in Table 3.12 that there are 11 degrees of awareness of creativity and innovation drivers, and this requires relying on a scale other than the Likert scale, as in Table 3.15. By changing the scale, the mean values will change and increase because the number of degrees or options has increased. Table 3.13 presents the mean value of the awareness of total sample, which is 7.00, while the value of standard deviation is 2.48. Also, the mean value of the level of awareness of respondents in the public sector is 6.98, while the mean value in the private sector is 7.10. Both the awareness degrees of public and private sector employees are high. This indicates that the degree of awareness of the respondents of the private sector is slightly higher than the awareness of the public sector.

This indicator is one of the three main objectives to be found in this study. This objective is the second objective, which is to know the degree of public sector employees' awareness of creativity and innovation drivers in their organizations. Also, part of the third objective was obtained, which is a comparison of the level of awareness of public and private sector employees.

Category		Total			Public sector			Private sector		
		Freq.	Mean	SD	Freq.	Mean	SD	Freq.	Mean	SD
12	Degree of awareness	298	7.00	2.48	206	6.98	2.45	92	7.10	2.56

Table 3.13: Mean, SD and frequencies according to the degree of awareness

➤ Suggestion:

Because the answer to this question is not compulsory, the respondents will be divided into two types: suggested and non-suggested respondents. The request for the suggested question from the respondents is in order to develop effective suggestions in future proposals to add to this study. Table 3.14 shows that 19.5% of the respondents provided the suggestions, while 80.5% of respondents did not give suggestions. As shown in the table below, the number of respondents to add the suggestions was less than those who did not add any suggestions. Also, most of the suggestions regarding another proposed factor to be added to the six in the study were from respondents in the public sector, at a rate of 77.8% of the total respondents who provided suggestions.

Category		Details	Total		Public sector		Private sector	
			Freq.	(%)	Freq.	(%)	Freq.	(%)
13	Suggested factor	Suggested	58	19.5%	46	22.3%	12	13%
		Non-suggested	240	80.5%	160	77.7%	80	87%
Total			298	100%	206	69.1%	92	30.9%

Table 3.14: Distribution of the respondents according to providing the suggested factor

In fact, there are several constructive and useful proposals by adding a new suggested factor to the six suggested drivers by this study, namely experimentation, feedback, motivation, training, responding to low performers, and budget constraints. In the study's questionnaire, in the personal and organizational data section of the respondents, a question was asked to identify the suggested additional factors to influence creativity and innovation in the organization in Question No. 12, where the question was: (This study suggests six drivers that impact on creativity, Do you suggest another factor (if possible)?). This question was answered with several good suggestions for factors that can be used in future studies. These proposals are as follows:

1. Wise leadership.
2. Define your skills and decide which skills to develop.
3. Participation of employees in the challenges and goals of the organization and sharing with them the results and profits.
4. Conducting a feasibility study for each idea added to the work and its effectiveness on low-performing people.
5. Breaking out of the ordinary.
6. An environment suitable for creativity.

7. Encourage those with competence, provide them the opportunity to innovate, and support them.
8. Measuring the impact of doing one of the ideas and evaluating and developing the results
9. Strategies for ways to improve work.
10. Giving opportunities to people working in the public sector to innovate so that they can be a generation of confidence and strength.
11. Increased boldness.
12. Familiarizing employers with innovation and its importance.
13. Passion for creativity.
14. Changing the nature of work from one job to another.
15. The continuous moral and material reward for the employee.
16. Provide a positive and healthy work environment.
17. Job satisfaction.
18. Link innovation with GDP per capita.
19. Taking suggestions from consumers themselves to develop services and products.
20. Team work.
21. Appreciating and giving them their rights drives them to love innovation.
22. Introduce the principle of consultation with qualified employees at work.
23. Avoid employing people with weak qualifications to perform innovative tasks.
24. Avoid working under pressure.
25. Not to abandon qualified people and not to keep those with weak competencies.
26. Spread the positivity.
27. Contacting government institutions outside Bahrain to learn about innovative activities.
28. Enjoy doing work as if it were your hobby.

- 29.The existence of religious scruples dictates that the job must be mastered.
- 30.High productivity and the desire to leave an imprint on the employee before retirement.
- 31.Spread the spirit of love and cooperation between employees and managers.
- 32.The lack of tasks for employees leaves more opportunity for creativity.
- 33.Learning from failures.
- 34.Desire to change.
- 35.Introducing useful technology at work.
- 36.Do periodic meetings that focus on creativity and brainstorming.
- 37.Education and awareness of the importance of creativity.
- 38.Explain the definition and content of innovation to employees before starting it.
- 39.Participate in creative competitions.
- 40.Honest competition between employees with material and moral incentives.
- 41.Supportive supervisors.
- 42.Stability at work.
- 43.Enter the investments in public sector organizations.
- 44.Government policies.
- 45.Create a search and development (S&D) section in the company.
- 46.If the global innovation index of the country is high, it will encourage innovation in the public sector.

These proposals included in the questionnaire of this study were avoided in the presentation of repetition and unhelpful proposals that do not rise to their inclusion with previous proposals. Of course, there are some unhelpful suggestions made by the respondents and some great ones, and some of them provide great ideas that may be taken advantage of, as presented in the previous

points. All the proposals in the questionnaire were presented here and will be analyzed, and some of them will be addressed in the proposals for future studies.

In this section, the second analytical test was performed for this study out of four, which is calculating the distributions of proportions and frequency for the analysis of demographic factors on employees of public and private sector organizations.

3.9.2. Factors Data:

The second section of the questionnaire asked about the factors that encourage creativity and innovation in Bahraini public or private sector organizations. Concerning the critical factors related to creativity and innovation in a number of Bahraini organizations, the respondents were asked to express their level of agreement on a scale ranking using a five-point Likert scale, with a score of one indicating "strongly disagree" and a score of five indicating "strongly agree." The analysis ranks the indicators within each construct using a simple mean-based method. Any value that comes between 1 to 1.8 is considered very low, and when a value comes between 1.8 to 2.6, the value is low, and when a value comes between 2.6 to 3.4, the value is medium. when a value comes between 3.4 to 4.2, the value is high, when a value comes between 4.2 to 5, the value is very high. Table 3.15 will show how the mean scale is processed and divided according to the five-point Likert scale and determine the relationship with the respondents' answers (Hair et al., 2011; Al-Bassam, 2018; Al-Taie, 2017). This table was chosen to distribute the average values because of its clarity and suits the Likert method used in asking the questionnaire for this study and to facilitate drawing conclusions later.

	Mean value	Mean estimation
1	From 1 to 1.8	Very low
2	From 1.81 to 2.6	Low
3	From 2.61 to 3.4	Medium
4	From 3.41 to 4.2	High
5	From 4.21 to 5	Very high

Table 3.15: Division of the mean scale

Table 3.16 presents an overview of the factors ranked by the mean. The mean for experimentation is the greatest at 3.96, whereas the mean for budget constraints is the lowest at 3.49. The difference between the greatest and lowest values is 0.47. As a result, the first rank is for experimentation with a mean of 3.96, the second rank is for feedback with a mean of 3.82, the third rank is for learning with a mean of 3.81, the fourth is for motivation with a mean of 3.79, the fifth is for responding to low performers with a mean of 3.73, and the lowest rank is for budget constraints with a mean of 3.49.

For information only, the lower the standard deviation value, the less dispersion will be around the answers to this question. The factor with the highest standard deviation among all factors is budget constraints, which represents 0.83, and the least is feedback, which represents 0.66. The difference between the highest and lowest is 0.16, and this indicates that the answers are not very dispersed in the respondents' answers to questions regarding these factors. Table 3.16 shows a summary of the mean for all factors, but each factor will be explained separately with its statements in the questionnaire in a detailed form.

Rank	Factors	Total		Public sector		Private sector	
		Mean	SD	Mean	SD	Mean	SD
#	Creativity & innovation (DV)	3.77	1.05	3.67	0.719	3.91	0.730
1	Experimentation	3.96	0.67	3.91	0.683	4.08	0.631
2	Feedback	3.82	0.66	3.81	0.689	3.87	0.648
3	Learning	3.81	0.84	3.77	0.881	3.90	0.740
4	Motivation	3.79	0.74	3.76	0.777	3.85	0.646
5	Responding to low performers	3.73	0.67	3.70	0.674	3.79	0.661
6	Budget constrains	3.49	0.83	3.44	0.851	3.58	0.800

Table 3.16: The summary of the factors ranked by the mean

➤ Creativity and innovation (Dependent variable):

This factor measures the extent to which these drivers exist in Bahraini public or private sector organizations. This factor has 6 questions in the questionnaire with the ranking of mean results arranged in descending order from highest to lowest as shown in table 3.17.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	6	34	85	128	42	3.58	0.95	6
	Per. (%)	2	11.3	28.3	42.7	14			
2	Freq.	9	42	66	102	81	3.70	1.10	5
	Per. (%)	3	14	22	34	27			
3	Freq.	7	35	61	108	89	3.84	1.05	2
	Per. (%)	2.3	11.7	20.3	36	29.7			

4	Freq.	11	28	71	107	83	3.78	1.06	4
	Per. (%)	3.7	9.3	23.7	35.7	27.7			
5	Freq.	6	29	51	112	102	3.92	1.05	1
	Per. (%)	2	9.7	17	37.3	34			
6	Freq.	11	35	59	109	86	3.79	1.08	3
	Per. (%)	3.7	11.7	19.7	36.3	28.7			
Total average							3.77	1.05	

Table 3.17: Ranked statement for the creativity and innovation factor

The statements of creativity and innovation (questions):

1. In the last year, my organization implement of any innovative and creative activity.
2. Employees of the organization are fully aware of the innovative and creative activities established in our organization.
3. My organization provides a clear understanding of the main objectives and innovative plans for the employees.
4. My organization asks the employees to participate in the innovative and creative activities.
5. There are several constrains in order to implement innovative and creative activities in my organization.
6. My organization will incur many losses and threats if the innovation and creative plans are not implemented.

According to Table 3.17, the statements on the creativity and innovation had a mean value that went from 3.58 to 3.92, while their standard deviation values were in the range of 0.95 to 1.10. With a mean of 3.95 and a standard deviation of (1.05), statement number five receives the top ranking. With

a mean of (3.84) and a standard deviation of (1.05), statement number 3 comes in second. Statement 6 is driven by the third rank, which has a mean and standard deviation of (3.79) and (1.08). With a mean of (3.78) and a standard deviation of 1.06, statement number four comes in fourth place. The fifth rank is for statement number 2, with a mean of (3.70) and a standard deviation of (1.10). The last rank is for statement number 1, with the lowest mean of (3.58) and lowest standard deviation of (0.95). As a result, the creativity and innovation factor's mean average is (3.77) and the standard deviation is (1.05), which reflects that the respondents agreed (high mean value) with this factor.

In order to achieve the third objective of this study, which is to provide a comparison between public and private sector employees in the field of measuring the level of impact of creativity and innovation drivers and their level of awareness of these drivers in their organizations. A comparison of the degree of awareness between public and private sector employees was previously found in this study and is part of the third objective. The remainder of the third objective is a comparison between the public and private sectors in terms of the impact of creativity and innovation drivers. To complete this goal, these two sectors will be compared in each of the factors separately. The results of the final analyses are placed at the end of the analysis of each factor separately, and they will all be collected in the results section of this study. The mean and standard deviations were found for each statement of the creativity and innovation factors shown in Table 3.18 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.50	0.921	3.66	0.969

2	3.55	1.137	3.96	0.994
3	3.72	1.072	3.93	1.046
4	3.63	1.109	4.00	0.961
5	3.89	0.999	3.99	1.124
6	3.68	1.123	3.92	1.019
Total	3.67	0.719	3.91	0.730

Table 3.18: Mean and standard deviation for the creativity and innovation factor in public and private sector

It is clear from the previous table that there is a slight difference in the factor of the creativity and innovation drivers between the organizations of the public and private sectors. It is clear from the results of the table that the mean value of the importance of the creativity and innovation drivers among employees in public sector organizations was (3.67), and this means that the mean value falls on scale number 4 in the high estimated mean (3.41 - 4.20). The mean value of employees in private sector organizations was (3.91) within the high score (3.41–4.2) on scale No. 4. This means that the importance of this factor among private sector employees is slightly higher than that of public sector employees. By looking at the value of the standard deviation, it is clear that the dispersion of answers for public sector employees is slightly less than that of private sector employees. The highest mean value for public sector employees was for statement No. 5 and amounted to 3.89, while the highest mean value among private sector employees was for statement No. 4 and amounted to 4.00. Statement No. 1 is the lowest mean in both sectors, reaching 3.50 for the public sector and 3.66 for the private sector.

- **Result analysis:**

- 1) The creativity and innovation factor is highly spread in the public sector organizations in Bahrain.
- 2) The creativity and innovation factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ **Experimentation:**

In this part, the existence of experimentation on the occurrence of creativity and innovation is measured, whether in public or private sector organizations. This factor has 8 questions from the questionnaire to determine the spread of experimentation with the ranking of mean results, as shown in table 3.19.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	9	21	54	85	131	4.08	1.04	3
	Per. (%)	3	7	18	28.3	43.7			
2	Freq.	9	37	59	109	84	3.78	1.09	8
	Per. (%)	3.0	12.3	19.7	36.3	28.0			
3	Freq.	9	18	56	113	104	3.98	1.00	6
	Per. (%)	3.0	6.0	18.7	37.7	34.7			
4	Freq.	6	21	49	122	102	3.99	1.00	5
	Per. (%)	2.0	7.0	16.3	40.7	34.0			
5	Freq.	14	28	51	120	87	3.88	1.04	7
	Per. (%)	4.7	9.3	17.0	40.0	29.0			
6	Freq.	7	15	44	117	117	4.08	0.98	2

	Per. (%)	2.3	5.0	14.7	39.0	39.0			
7	Freq.	5	18	53	116	108	4.05	0.96	4
	Per. (%)	1.7	6.0	17.7	38.7	36.0			
8	Freq.	3	12	41	129	115	4.13	0.87	1
	Per. (%)	1.0	4.0	13.7	43.0	38.3			
Total average							3.96	0.67	

Table 3.19: Ranked statement for the experimentation factor

The statements of experimentation (questions):

- 1) In my organization, I have a choice in deciding how I do my work.
- 2) Employees have enough time and resources to try new ideas.
- 3) My organization provides opportunities to increase knowledge and experience.
- 4) My organization is cautious in implementing of any innovative and creative activities to avoid errors.
- 5) My organization defends for innovative employees when mistakes happen at work.
- 6) When experimenting with innovative and creative activities, there is a feeling of great pleasure and excitement while doing them.
- 7) Space, openness, and deregulation are essential elements that permit an organization's employees to experiment and innovate.
- 8) Employees tend to work best in organizations that encourage experimentation and innovation.

The mean value of the statements of the experimental factor ranged between (3.78 and 4.13), according to Table 3.19, while the values of the standard deviation were between (0.87- 1.09). Statement number 8 ranks at the top with the greatest mean (4.13) and smallest standard deviation (0.87). With a mean of (4.08)

and a standard deviation of (0.98), statement number 6 comes in second. With a mean of (4.08) and a standard deviation of (1.04), statement 1 is driven by the third rank. The fourth-ranking statement, number 7, has a mean of (4.05) and a standard deviation of (0.96). With a mean of (3.99) and a standard deviation of (1.00), statement number 4 comes in fifth place. The third statement, which has a mean of (3.98) and a standard deviation of (1.00), comes in sixth place. The fifth statement, which has a mean of (3.88) and a standard deviation of (1.04), comes in seventh place. The last rank is for statement number 2, with the lowest mean of (3.78) and highest standard deviation of (1.09). As a result, the experimentation factor mean value is (3.96) and the standard deviation is (0.67), which reflects that the respondents agreed that the experimentation factor is highly spread in their organizations.

In order to measure the impact of creativity and innovation drivers in both public and private sector organizations, it is important to measure the existence of experimentation factor. The mean and standard deviations were found for each statement of experimentation factor, shown in table 3.20 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.93	1.141	4.25	0.909
2	3.66	1.123	3.93	0.992
3	3.90	1.066	4.05	0.918
4	3.91	1.042	4.12	0.837
5	3.72	1.155	3.97	0.966
6	4.06	0.956	4.10	1.017
7	3.98	0.960	4.10	0.984

8	4.16	0.860	4.09	0.898
Total	3.91	0.683	4.08	0.631

Table 3.20: Mean and (SD) for the experimentation factor in public and private sector

It is clear from the previous table that there is a close existence of experimentation factor in public and private sector organizations. It is clear from the results of the table that the average presence of experimentation in public sector organizations amounted to (3.91), and this mean value falls on the number 4 in the high estimated average (3.41 – 4.20). While the mean value of employees in private sector organizations was (4.08) within the degree (3.41 - 4.2) on scale No. 4. This means that the experimentation factor is more prevalent in private sector organizations than in public sector organizations. The highest mean value for public sector employees was for statement No. 8 and amounted to 4.16, which indicates that they tend to work better in organizations that encourage experimentation and innovation. The highest average value among private sector employees was for statement No. 4, which amounted to 4.00, which indicates that their organizations are careful in implementing any innovative and creative drivers to avoid mistakes.

- **Result analysis:**

- 1) The experimentation factor is highly spread in the public sector in Bahrain.
- 2) The experimentation factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ Feedback:

Here, the existence of feedback is measured, whether in public or private sector organizations. This factor has 4 questions from the questionnaire to determine the spread of feedback with the ranking of mean results as shown in table 3.21.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	6	24	52	127	91	3.95	0.97	1
	Per. (%)	2.0	8.0	17.3	42.3	30.3			
2	Freq.	8	31	72	113	76	3.77	1.02	4
	Per. (%)	2.7	10.3	24.0	37.7	25.3			
3	Freq.	6	26	64	118	74	3.78	0.99	3
	Per. (%)	2.0	8.7	21.3	39.3	24.7			
4	Freq.	7	21	57	130	85	3.88	0.99	2
	Per. (%)	2.3	7	19	43.3	28.3			
Total average							3.82	0.66	

Table 3.21: Ranked statement for the feedback factor

The statements of feedback (questions):

- 1) I receive adequate feedback on my performance to enable me to deliver required results.
- 2) My supervisor provides me with regular and constructive feedback.
- 3) Feedback contributes to providing a positive impact on the performance of employees and their impressions on the innovative and creative work.

- 4) Without constructive feedback, it will reduce employees' desire for implementing innovative and creative activities.

Table 3.21 demonstrates that the mean value of the feedback factor statements varied between (3.77 - 3.95), while the standard deviation values were between (0.97 – 1.02). The first rank goes to statement number 1, with the highest mean of (3.95) and the lowest standard deviation of (0.97). Statement number 4 ranks second, with a mean of (3.88) and a standard deviation of (0.99). The third rank drives statement 3 with a mean of (3.78) and a standard deviation of (0.99). Statement number 2 ranks fourth, with a lowest mean of (3.77) and a highest standard deviation of (1.02). As a result, the feedback factor mean average is (3.82) and the standard deviation is (0.66), which reflects that the respondents agreed that the feedback is highly spread in their organizations.

The mean and standard deviations were found for each statement of feedback factor shown in Table 3.22 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.82	1.034	4.14	0.833
2	3.70	1.075	3.79	0.955
3	3.83	0.968	3.70	1.054
4	3.91	0.971	3.84	0.998
Total	3.81	0.689	3.87	0.648

Table 3.22: Mean and standard deviation for the feedback factor in public and private sector

It is clear from the previous table that there is a close existence of feedback factor between public and private sector organizations. It is clear from the results of the table that the average presence of feedback in public sector organizations amounted to (3.81), and this mean value falls on the number 4 in the high estimated average (3.41 – 4.20). The mean value of employees in private sector organizations was (3.87) within the high degree (3.41 - 4.2) on scale No. 4. This means that the feedback factor is slightly more prevalent among private sector organizations than among public sector organizations. The highest average value for public sector employees was for statement No. 4 and amounted to 3.91, which indicates that without constructive feedback, it will reduce employees' desire to implement innovative and creative drivers. The highest average value for private sector employees was for statement No. 1 and amounted to 4.14, which indicates that they receive adequate feedback on their performance to enable them to deliver the required results.

- **Result analysis:**

- 1) The feedback factor is highly spread in the public sector in Bahrain.
- 2) The feedback factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ **Motivation:**

Here, the existence of the motivation factor is measured, whether in public or private sector organizations. This factor contains 10 questions from the questionnaire to determine the spread of motivation with the ranking of mean results as shown in table 3.23.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	12	20	39	100	129	4.10	1.05	1
	Per. (%)	4.0	6.7	13.0	33.3	43.0			
2	Freq.	8	24	70	116	82	3.83	1.00	6
	Per. (%)	2.7	8.0	23.3	38.7	27.3			
3	Freq.	19	40	66	106	69	3.60	1.15	9
	Per. (%)	6.3	13.3	22.0	35.3	23.0			
4	Freq.	16	36	64	99	85	3.73	1.13	8
	Per. (%)	5.3	12.0	21.3	33.0	28.3			
5	Freq.	9	23	63	109	96	3.90	1.03	3
	Per. (%)	3.0	7.7	21.0	36.3	32.0			
6	Freq.	7	20	47	119	107	4.01	1.01	2
	Per. (%)	2.3	6.7	15.7	39.7	35.7			
7	Freq.	4	22	68	120	86	3.88	0.97	5
	Per. (%)	1.3	7.3	22.7	40.0	28.7			
8	Freq.	13	32	60	118	77	3.74	1.08	7
	Per. (%)	4.3	10.7	20.0	39.3	25.7			
9	Freq.	42	30	52	83	93	3.57	1.38	10
	Per. (%)	14.0	10.0	17.3	27.7	31.0			
10	Freq.	11	29	59	95	106	3.89	1.09	4
	Per. (%)	3.7	9.7	19.7	31.7	35.3			
Total average							3.79	0.74	

Table 3.23: Ranked statement for the motivation factor

The statements of motivation (questions):

- 1) My organization motivates me to achieve its objectives.
- 2) My organization motivates me to do the best in my job.
- 3) My organization uses innovative and creative activities for promotions, bonuses and training selections.
- 4) My organization relies on innovative and creative activities in evaluating the performance of employees.
- 5) My organization motivates the culture of creativity and innovation.
- 6) Giving employees appropriate trust and freedom of decision-making contributes to improving their performance.
- 7) Producing a large number of innovative products may increase employee motivation to improve performance.
- 8) My organization encourages non-material incentives to motivate employees towards creative and innovative activities.
- 9) My organization motivates me to participate in the government innovation competition in the Kingdom of Bahrain (Fikrah program).
- 10) My leader is eager to create an innovative climate in my organization.

According to Table 3.23, the motivation factor's mean value varied between (3.57 and 4.10) and the standard deviation values varied between (0.97 – 1.38). The statement with the greatest mean (4.10) and standard deviation (1.00) receives the top spot (0.05). The second-ranked statement is number 6, with a mean and standard deviation of (4.01) and (1.01), respectively. The statement 5 is driven by the third rank, which has a mean of (3.90) and a standard deviation of (1.03). The statement number 10 comes in fourth place with a mean of (3.89) and a standard deviation of (1.09). The statement number 7 comes in fifth place with a mean and standard deviation of (3.88) and (0.97) , respectively. The sixth-ranking

statement, number 7, has a mean of (3.83) and a standard deviation of (1.00). The seventh-ranking statement, number 8, has a mean of (3.74) and a standard deviation of (1.08). The eighth-ranking statement, number 4, has a mean of (3.73) and a standard deviation of (1.13). The ninth-ranking statement, number 3, has a mean of (3.60) and a standard deviation of (1.15). Last rank is for the statement number 9 with the lowest mean of (3.57) and highest standard deviation of (1.38). The motivation factor mean average is (3.79) and the standard deviation is (0.74), which reflects that the respondents agreed that motivation is highly spread in their organizations.

The mean and standard deviations were found for each statement of feedback factor shown in table 3.24 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.94	1.142	4.29	0.932
2	3.76	1.077	3.90	0.865
3	3.50	1.217	3.67	1.049
4	3.62	1.203	3.79	1.075
5	3.78	1.089	4.07	0.923
6	3.95	1.016	4.10	0.961
7	3.85	0.953	3.92	0.975
8	3.69	1.081	3.78	1.118
9	3.69	1.284	3.12	1.532
10	3.85	1.136	3.87	1.092
Total	3.76	0.777	3.85	0.646

Table 3.24: Mean and standard deviation for the motivation factor in public and private sector

It is clear from the previous table that there is a close existence of motivation factor between public and private sector organizations. It is clear from the results of the table that the average presence of motivation in public sector organizations amounted to (3.76), and this mean value falls on the number 4 in the high estimated average (3.41 – 4.20). While the mean value of employees in private sector organizations was (3.85) within the high degree (3.41 - 4.2) on scale No. 4. This means that the motivation factor is slightly more prevalent among private sector organizations than among public sector organizations in Bahrain. The highest average value for public sector employees was for statement No. 6 and amounted to 3.95, which indicates that giving employees appropriate trust and freedom of decision-making contributes to improving their performance. The highest mean value for private sector employees for statement No. 1 was 4.29, which indicates that the mean is found in scale No. 5, which ranges between (4.21 - 5.00), which indicates that their organizations motivate them to achieve their goals. According to the results of the study, there is little interest from public sector organizations and motivate their employees to participate in the government innovation competition, and the mean value represents (3.69).

Among the results of this study is that the results of previous studies were confirmed in that intrinsic motivation is more influential than extrinsic motivation, so the third question of the motivation factor is the only question that measures extrinsic motivation in terms of financial profit and bonus for the occurrence of creativity and innovation. The answers to the questionnaire showed that extrinsic motivation has the least influence and relationship to the occurrence of creativity (Pascual & Galende, 2017).

- **Result analysis:**

- 1) The motivation factor is highly spread in the public sector in Bahrain.
- 2) The motivation factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ **Learning:**

This part evaluates whether the learning factor exists in organizations from the public or private sectors. The ranking of the mean responses for this factor's 5 questions from the questionnaire used to assess the spread of learning is displayed in table 3.25.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	6	21	47	104	122	4.10	0.99	1
	Per. (%)	2.0	7.0	15.7	34.7	40.7			
2	Freq.	4	32	71	89	104	3.89	1.04	2
	Per. (%)	1.3	10.7	23.7	29.7	34.7			
3	Freq.	11	21	72	104	92	3.87	1.02	3
	Per. (%)	3.7	7.0	24.0	34.7	30.7			
4	Freq.	7	35	79	90	89	3.79	1.05	4
	Per. (%)	2.3	11.7	26.3	30.0	29.7			
5	Freq.	19	30	76	105	70	3.65	1.10	5
	Per. (%)	6.3	10.0	25.3	35.0	23.3			
Total average							3.81	0.84	

Table 3.25: Ranked statement for the learning factor

The statements of learning (questions):

- 1) My organization provides formal training activities.
- 2) My organization has clear policies and training programs to do innovative and creative activities in the future.
- 3) My organization provides excellent training path for new employees.
- 4) My organization identifies training needs to conduct innovative and creative activities.
- 5) My organization conducts specialized and intensive training in extracting the innovative efforts and ideas of the employees.

Table 3.25 shows that the mean value of the statements of learning factor ranged between (3.65 – 4.10), while the values of standard deviation ranged between (0.99 – 1.10). The first-ranking statement, number 1, has a mean of (4.10) and a standard deviation of (0.99). The second-ranking statement, number 2, has a mean of (3.89) and a standard deviation of (1.04). The third-ranking statement, number 3, has a mean of (3.87) and a standard deviation of (1.02). The fourth-ranking statement, number 4, has a mean of (3.79) and a standard deviation of (1.05). Last rank goes to the statement number 5 with lowest mean of (3.65) and highest standard deviation of (1.10). This means that the learning factor mean average is (3.81) and standard deviation is (0.84), which reflects that the respondents strongly agreed that the learning is highly spread in their organizations.

The mean and standard deviations were found for each statement of learning factor shown in table 3.26 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	4.03	1.021	4.11	1.000
2	3.82	1.084	3.95	0.999
3	3.82	1.071	3.83	1.055
4	3.73	1.102	3.75	1.044
5	3.47	1.180	3.86	1.001
Total	3.77	0.881	3.90	0.740

Table 3.26: Mean and standard deviation for the learning factor in public and private sector

The previous table shows that there is a significant existence in the public and private sector organizations in terms of learning. According to the table data, the average availability of learning in public sector organizations was (3.77), whereas the mean value of employees in private sector organizations was (3.90). Both sectors, on a scale of 4, were within the high level (3.41 - 4.2). This means that the learning factor is highly spread in the public and private sectors in Bahrain; however, the learning factor in private sector organizations is more prevalent than among public sector organizations. The highest mean value was for public and private sector employees for statement No. 1, and it reached 4.03 for public sector employees and 4.11 for the private sector, which indicates that their organizations provide formal learning drivers.

- **Result analysis:**

- 1) The learning factor is highly spread in the public sector in Bahrain.
- 2) The learning factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ Responding to low performers:

In this part, the existence of responding to low performers is measured, whether in public or private sector organizations. This factor has 6 questions from the questionnaire to determine the spread of responding to low performers with the ranking of mean results as shown in table 3.27.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	10	40	67	116	67	3.66	1.06	5
	Per. (%)	3.3	13.3	22.3	38.7	22.3			
2	Freq.	15	37	86	93	69	3.60	1.09	6
	Per. (%)	5.0	12.3	28.7	31.0	23.0			
3	Freq.	10	34	71	111	74	3.74	1.02	3
	Per. (%)	3.3	11.3	23.7	37.0	24.7			
4	Freq.	2	36	64	107	91	3.83	1.02	2
	Per. (%)	0.7	12.0	21.3	35.7	30.3			
5	Freq.	14	29	72	104	81	3.72	1.11	4
	Per. (%)	4.7	9.7	24.0	34.7	27.0			
6	Freq.	8	18	52	121	101	3.96	1.00	1
	Per. (%)	2.7	6.0	17.3	40.3	33.7			
Total average							3.73	0.67	

Table 3.27: Ranked statement for the responding to low performers factor

The statements of responding to low performers (questions):

- 1) My organization measures employee performance based on the achievement of the organization's goals and results.
- 2) My supervisor appropriately deals with employees that perform poorly.
- 3) My organization deals with underperformance effectively.
- 4) Failure to respond appropriately to underperforming employees affects the morale and performance of other employees at work.
- 5) My organization uses strict punishments for employees with low performance and innovation.
- 6) Honoring outstanding employees will motivate low-performing employees to improve their performance.

Table 3.27 shows that the mean value of the statements of responding to low performers factor ranged between (3.60 – 3.96), while the values of standard deviation ranged between (1.00 – 1.11). The first-ranking statement, number 6, has the strongest mean of (3.96) and the lowest standard deviation of (1.00). The second-ranking statement, number 4, has a mean of (3.83) and a standard deviation of (1.02). The third-ranking statement, number 3, has a mean of (3.74) and a standard deviation of (1.02). The fourth-ranking statement, number 5, has a mean of (3.72) and a standard deviation of (1.11). The fifth-ranking statement, number 1, has a mean of (3.66) and a standard deviation of (1.06). Last rank goes to the statement number 2 with a mean of (3.60) and standard deviation of (1.09). As a result, the responding to low performers factor mean average is (3.73) and standard deviation is (0.67), which reflects that the respondents agreed that the responding to low performers factor is highly spread in their organizations.

The mean and standard deviations were found for each statement of responding to low performers factor shown in table 3.28 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.63	1.100	3.67	1.007
2	3.52	1.155	3.61	1.058
3	3.67	1.067	3.73	1.080
4	3.80	1.024	3.89	1.010
5	3.64	1.099	3.87	1.092
6	3.95	1.006	3.98	0.983
Total	3.70	0.674	3.79	0.661

Table 3.28: Mean and (SD) for the responding to low performers factor in public and private sectors

The previous table shows that there is a significant existence in the public and private sector organizations in terms of responding to low performers. According to the table data, the average availability of responding to low performers in public sector organizations was (3.70), whereas this mean value of employees in private sector organizations was (3.79). Both sectors, on a scale of 4, were within the high level (3.41 - 4.2). This means that the responding to low performers factor is highly spread in the public and private sectors in Bahrain, however, the responding to low performers factor in private sector organizations is slightly more prevalent than among public sector organizations. The highest mean value was for public and private sector employees for statement No. 6, and it reached (3.95) for public sector employees, and it reached (3.98) for the private sector, which indicates that they believed that honoring outstanding employees will motivate low-performing employees to improve their performance.

- **Result analysis:**

- 1) The responding to low performers factor is highly spread in the public sector in Bahrain.
- 2) The responding to low performers factor in private sector organizations is slightly more prevalent than among public sector organizations.

➤ **Budget Constraints:**

This part assesses the presence of budget constraints in organizations, including public and private sectors. This component includes six questionnaire items to measure the existence of budget constraints, with the ranking of mean results provided in table 3.29.

Statement No.	Frequencies & percentage	Degree of agreement					Mean	SD	Rank
		Strongly disagree	Disagree	Natural	Agree	Strongly agree			
1	Freq.	17	23	57	106	97	3.81	1.15	1
	Per. (%)	5.7	7.7	19.0	35.3	32.3			
2	Freq.	32	49	71	83	65	3.36	1.27	6
	Per. (%)	10.7	16.3	23.7	27.7	21.7			
3	Freq.	22	52	81	86	59	3.37	1.19	5
	Per. (%)	7.3	17.3	27.0	28.7	19.7			
4	Freq.	27	43	74	86	70	3.43	1.24	4
	Per. (%)	9.0	14.3	24.7	28.7	23.3			
5	Freq.	21	48	81	82	68	3.47	1.19	3
	Per. (%)	7.0	16.0	27.0	27.3	22.7			

6	Freq.	24	32	67	105	72	3.55	1.21	2
	Per. (%)	8.0	10.7	22.3	35.0	24.0			
Total average							3.49	0.83	

Table 3.29: Ranked statement for the budget constraints factor

The statements of budget constraints (questions):

- 1) The abundance of resources and a good budget make the door open to the implementation of all innovative plans.
- 2) Innovative activities increases if the budget constraints and resource scarcity increase.
- 3) My organization facilitates new methods to improve quality and cost.
- 4) My organization is using all available resources to do its work well.
- 5) My organization is spending appropriately on innovative activities priorities.
- 6) Many supervisors in organizations tend to decrease the budget to a minimum when it comes to innovative issues.

Table 3.29 shows that the mean value of the statements of budget constraints factor ranged between (3.36 – 3.81), while the values of standard deviation ranged between (1.15 – 1.27). The first-ranking statement, number 1, has the highest mean of (3.81) and the lowest standard deviation of (1.15). The second-ranking statement, number 6, has a mean of (3.55) and a standard deviation of (1.21). The third-ranking statement, number 5, has a mean of (3.47) and a standard deviation of (1.19). The fourth-ranking statement, number 4, has a mean of (3.43) and a standard deviation of (1.24). The fifth-ranking statement, number 3, has a mean of (3.37) and a standard deviation of (1.19). Last rank goes to the statement number 4 with a mean of (3.36) and standard deviation of (1.27). This means that the budget constraints factor mean average is (3.49) and standard deviation is

(0.83), which reflects that the respondents agreed that the budget constraints is highly spread in their organizations.

The mean and standard deviations were found for each statement of budget constraints factor shown in table 3.30 as follows:

Statement No.	Public sector		Private sector	
	Mean	SD	Mean	SD
1	3.83	1.158	3.76	1.113
2	3.24	1.299	3.54	1.208
3	3.33	1.232	3.42	1.092
4	3.37	1.273	3.54	1.171
5	3.32	1.235	3.67	1.101
6	3.57	1.182	3.55	1.235
Total	3.44	0.851	3.58	0.800

Table 3.30: Mean and (SD) for the budget constraints factor in public and private sector

The previous table shows that there is a significant existence in the public and private sector organizations in terms of budget constraints. According to the table data, the average availability of budget constraints in public sector organizations was (3.44), whereas this mean value of employees in private sector organizations was (3.58). Both sectors, on a scale of 4, were within the high level (3.41 - 4.2). This means that the budget constraints factor is highly spread in the public and private sectors in Bahrain, however, the budget constraints factor in private sector organizations is slightly more prevalent than among public sector organizations. The highest mean value was for public and private sector employees for statement No. 1, and it reached (3.83) for public sector employees, and it

reached (3.78) for the private sector, which indicates that they believed that the abundance of resources and a good budget opens the door to the implementation of all innovative plans.

- **Result analysis:**

- 1) The budget constraints factor is highly spread in the public sector in Bahrain.
- 2) The budget constraints factor in private sector organizations is slightly more prevalent than among public sector organizations.

3.9.3. Hypotheses Testing:

The research hypotheses were tested through the Pearson Correlation method to detect relationships to achieve the first main objective of this study. The Pearson Correlation test is between the six factors (experimentation, feedback, motivation, education, response to low performers, and budget constraints) with the creativity and innovation in public sector organizations, in addition to comparing it with the private sector. It was also mentioned previously that the drivers of creativity and innovation will be mentioned as the factors affecting the emergence of the creativity and innovation. Table 3.31 showed the relationship level between factors in the study based on (Hair et al., 2011; Al-Bassam, 2018). This table illustrated the level of relationship between the factors in the study, as the strength of the relationship between any two factors depends on the value of the coefficient. If it is between (0.800 – 1.000), it will be very strong, if it is between (0.600 – 0.799), it will be strong, if it is between (0.400 – 0.599), it will be moderate, if it is between (0.200 – 0.399), it will be weak, and if it is between (0.000 – 0.199), it will be very weak.

Level	Interval coefficient	Relationship level
5	0.800 – 1.000	Very strong
4	0.600 – 0.799	Strong
3	0.400 – 0.599	Moderate
2	0.200 – 0.399	Weak
1	0.000 – 0.199	Very weak

Table 3.31: the strength of relationship between factors

Table 3.32 shows that the Pearson correlation coefficient is positive and statistically significant at the 0.01 level with 99% confidence to support all factors. In the table below, the factors are arranged in descending order from the strongest correlated (experimentation) with the creativity and innovation to the weakest (budget constrains), according to interval coefficient that shown in table 3.31. All factors have a significant positive relationship. Experimentation and motivation factors are strongly positively associated with the creativity and innovation among all respondents to this questionnaire with values of 0.735 and 0.627, respectively. While learning, feedback and responding to low performers had a moderate positive relationship with values: 0.514, 0.469 and 0.437, respectively. As for the budget constraints, it has a positive relationship, but it is a weak relationship, representing a value of 0.354.

Factor	Total		Public sector		Private sector	
	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)
Experimentation	0.735	0.000	0.721	0.000	0.760	0.000

Motivation	0.627	0.000	0.655	0.000	0.563	0.000
Learning	0.514	0.000	0.551	0.000	0.409	0.000
Feedback	0.469	0.000	0.323	0.000	0.515	0.000
Responding to low performers	0.437	0.000	0.387	0.000	0.542	0.000
Budget constrains	0.354	0.000	0.355	0.000	0.328	0.001

Table 3.32: Pearson correlation coefficient

In order to achieve the first objective of this study, which is to measure the level of impact of creativity and innovation drivers on public sector organizations in the Kingdom of Bahrain, the relationships in the hypotheses will be measured by the Pearson coefficient, which is the fourth and final analytical tool in this study. The remaining part of the third objective will be done in this section, which is to complete the comparison between the relationship of factors and the creativity and innovation between the public and private sectors. Table 3.32 describes the relationship between the creativity and innovation in the public and private sectors and its factors by using the Pearson correlation coefficient. Here, the hypotheses of the study will be discussed and commented on, either as being identical to the hypothesis or contrary to it. The hypothesis analysis will start as follows:

H1: The first hypothesis states the following: "Experimentation has a significant positive impact on creativity and innovation in public sector organizations," with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (creativity and innovation) and the statements of the independent factor (experimentation), the results showed, as shown in Table 33.3, that there is a

strong positive correlation between the factor of experimentation and the creativity and innovation in public sector organizations, and the value of the correlation coefficient was 0.721 at level four (strong), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases as the experimentation factor is used. When comparing the relationship between experimentation and the creativity and innovation in private sector organizations, it is clear that the private sector is stronger in the relationship between them than the public sector, with a value of (0.760), and this also puts it in the strong relationship level that is between (0.600 – 0.799). This result is supported by (Demircioglu & Audretsch, 2017, Deci & Ryan, 1985; Ryan & Deci, 2000, Borins, 2001; Albury, 2011; Sahni et al., 2013; Dawson & Denford, 2015).

- **Result analysis:**

- 1) There is a significant positive relationship between the experimentation factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.721), which is a strong correlation.
- 2) The private sector organizations are stronger than the public sector organizations in the relationship between experimentation and the creativity and innovation.

H2: The second hypothesis states the following: "Feedback has a significant positive impact on creativity and innovation in public sector organizations" with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (the creativity and innovation) and the statements of the

independent factor (feedback), the results showed that there is a weak positive correlation between the factor of feedback and the creativity and innovation in public sector organizations, and the value of the correlation coefficient was (0.323) at level two (weak relationship), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases slightly whenever the feedback factor is used. When comparing the relationship between feedback and the creativity and innovation in private sector organizations, it is clear that the private sector is stronger than the public sector, with a value of (0.515), and this also puts it in the moderate relationship level that is between (0.400 – 0.599). This result is supported by (Weibel & Six, 2013; Ryan & Deci, 2000; Demircioglu & Audretsch, 2017).

- **Result analysis:**

- 1) There is a significant positive relationship between the feedback factor and the creativity and innovation in the Bahraini public sector organizations, and the correlation factor (0.323), which is a weak correlation.
- 2) The private sector organizations are stronger than the public sector organizations in the relationship between experimentation and the creativity and innovation.

H3: The third hypothesis states the following: “Motivation has a significant positive impact on creativity and innovation in public sector organizations” with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (the creativity and innovation) and the statements of the independent factor (motivation), the results came that there is a strong positive correlation between the factor of motivation and the creativity and innovation in

public sector organizations, and the value of the correlation coefficient was (0.655) at level four (strong), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases as the motivation factor is used. While when comparing the relationship between motivation and the creativity and innovation in the private sector organizations, it is clear that the public sector is stronger than in the private sector, with a value of (0.563), and this also puts it in the moderate relationship level that is between (0.400 – 0.599). This result supported by (Albury, 2005; Halvorsen et al., 2005; Demircioglu & Audretsch, 2017).

- **Result analysis:**

- 1) There is a significant positive relationship between the motivation factor and the creativity and innovation in the Bahraini public sector organizations, and the correlation factor (0.655), which is a strong correlation.
- 2) The private sector organizations are stronger than the public sector organizations in the relationship between motivation and the creativity and innovation.

H4: The forth hypothesis states the following: “Learning has a significant positive impact on creativity and innovation in public sector organizations” with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (the creativity and innovation) and the statements of the independent factor (learning), the results came that there is a moderate positive correlation between the factor of learning and the creativity and innovation in

public sector organizations, and the value of the correlation coefficient was (0.551) at level three (moderate), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases as the learning factor is used. When comparing the relationship between learning and the creativity and innovation in the private sector organizations, it is clear that the public sector is stronger than the private sector, with a value of (0.409) for the private sector, and this also puts it in the moderate relationship level that is between (0.400 – 0.599). This result supported by (Watkins & Marsick, 1996; Demircioglu & Audretsch, 2017).

- **Result analysis:**

- 1) There is a significant positive relationship between the learning factor and the creativity and innovation in the Bahraini public sector organizations, and the correlation factor (0.551), which is a moderate correlation.
- 2) The public sector organizations are stronger than the private sector organizations in the relationship between motivation and the creativity and innovation.

H5: The fifth hypothesis states the following: "Responding to low performers has a significant positive impact on creativity and innovation in public sector organizations" with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (the creativity and innovation) and the statements of the independent factor (responding to low performers), the results showed that there is a weak positive correlation between the factor of responding to low performers and the creativity and innovation in public sector organizations,

and the value of the correlation coefficient was (0.387) at level two (weak relationship), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases slightly whenever the responding to low performers factor is used. When comparing the relationship between responding to low performers and the creativity and innovation in private sector organizations, the private sector is clearly stronger than the public sector, with a value of (0.542), and this also places it in the moderate relationship level, which is between (0.400 and 0.599). This result is supported by (Demircioglu & Audretsch, 2017; (Verhoest et al. 2007).

- **Result analysis:**

- 1) There is a significant positive relationship between the responding to low performers factor and the creativity and innovation in the Bahraini public sector organizations, and the correlation factor (0.387), which is weak correlation.
- 2) The private sector organizations are stronger than the public sector organizations in the relationship between motivation and the creativity and innovation.

H6: The sixth hypothesis states the following: "Budget constraints has a significant positive impact on creativity and innovation in public sector organizations" with significant = 0.000 which is less than 0.01, therefore the hypothesis is accepted. By calculating the Pearson correlation coefficient between the statements of the dependent factor (the creativity and innovation) and the statements of the independent factor (budget constraints), the results showed, as shown in Table 33.3 that there is a weak positive correlation between the factor of budget constraints and the creativity and innovation in public sector organizations, and the value of

the correlation coefficient was (0.355) at level two (weak relationship), which is a statistically significant relationship (0.01). This result indicates that the creativity and innovation increases as the budget constraint factor is used. When comparing the relationship between budget constraints and the creativity and innovation in private sector organizations, it is clear that the private sector is less strong in the relationship between them than the public sector, with a value of (0.328), and this also puts it in the weak relationship level that is between (0.200 – 0.399). This result is supported by (Sahni et al., 2013; Osborne & Gaebler, 1992; Osborne & Plastrik, 1997).

- **Result analysis:**

- 1) There is a significant positive relationship between the budget constraints factor and the creativity and innovation in the Bahraini public sector organizations, and the correlation factor (0.355), which is weak correlation.
- 2) The public sector organizations are stronger than the private sector organizations in the relationship between motivation and the creativity and innovation.

Chapter four: Results, discussion and recommendations

4.1. Results:

In this section, all results that were extracted during the study will be summarized after carrying out four analytical methods to extract the three required study objectives. In order to achieve each main goal, several sub-goals are required. The first objective of the study is to measure the level of impact of creativity and innovation drivers on public sector organizations in the Kingdom of Bahrain. To achieve this goal, it is necessary to measure the existence of creativity and innovation drivers in public sector organizations and then find the correlation between them and the occurrence of creativity and innovation. The presence of these factors will be expressed as follows:

- 1) The level of creativity and innovation in Bahraini public sector organizations has a mean value of (3.77), which indicates a high degree.
- 2) The level of experimentation in Bahraini public sector organizations has a mean value of (3.91), which indicates a high degree.
- 3) The level of feedback in Bahraini public sector organizations has a mean value of (3.81), which indicates a high degree.
- 4) The level of motivation in Bahraini public sector organizations has a mean value of (3.76), which indicates a high degree.
- 5) The level of learning in Bahraini public sector organizations has a mean value of (3.77), which indicates a high degree.
- 6) The level of responding to low performers in Bahraini public sector organizations has a mean value of (3.70), which indicates a high degree.
- 7) The level of budget constraints in Bahraini public sector organizations has a mean value of (3.44), which indicates a high degree.

After confirming the presence of all creativity and innovation drivers in the Bahraini public sector organizations, the role comes to measure the relationship between these factors and the occurrence of creativity and innovation, as suggested by the hypotheses of this study. The results will be as follows:

- 1) There is a significant positive relationship between the experimentation factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.721), which is a strong correlation.
- 2) There is a significant positive relationship between the motivation factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.655), which is a strong correlation.
- 3) There is a significant positive relationship between the learning factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.551), which is a moderate correlation.
- 4) There is a significant positive relationship between the feedback factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.323), which is a weak correlation.
- 5) There is a significant positive relationship between the responding to low performers factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.387), which is a weak correlation.
- 6) There is a significant positive relationship between the budget constraints factor and the creativity and innovation in Bahraini public sector organizations and the correlation factor (0.355), which is a weak correlation.

The second objective of this study is to measure the level of public sector employees' awareness of the existence of creativity and innovation drivers in their organizations. The result will be as follows:

- 1) The level of awareness of employees in Bahraini public sector organizations has a mean value of (6.98), which indicates a high degree.

The third objective of the study is to provide a comparison between public and private sector employees in the field of measuring the level of impact of creativity and innovation drivers and measuring their level of awareness of these drivers. First, the comparison will be about the existence of creativity and innovation drivers in all respondents, then the comparison between the public and private sectors. The result will be as follows:

- 1) The level of creativity and innovation in Bahraini organizations has a mean value of (3.67), which indicates a high degree; while private sector organizations, with a mean of (3.91), are more prevalent than public sector organizations, with a mean of (3.67).
- 2) The level of experimentation in Bahraini organizations has a mean value of (3.96), which indicates a high degree; while private sector organizations, with a mean of (4.08), are slightly more prevalent than public sector organizations, with a mean of (3.91).
- 3) The level of feedback in Bahraini organizations has a mean value of (3.82), which indicates a high degree; while private sector organizations, with a mean of (3.87), are slightly more prevalent than public sector organizations, with a mean of (3.81).
- 4) The level of motivation in Bahraini organizations has a mean value of (3.79), which indicates a high degree; while private sector organizations, with a mean of (3.85), are slightly more prevalent than public sector organizations, with a mean of (3.76).
- 5) The level of learning in Bahraini organizations has a mean value of (3.81), which indicates a high degree; while private sector organizations, with a mean

of (3.90), are slightly more prevalent than public sector organizations, with a mean of (3.77).

- 6) The level of responding to low performers in Bahraini organizations has a mean value of (3.73), which indicates a high degree; while private sector organizations, with a mean of (3.79), are slightly more prevalent than public sector organizations, with a mean of (3.70).
- 7) The level of budget constraints in Bahraini organizations has a mean value of (3.49), which indicates a high degree; while private sector organizations, with a mean of (3.58), are slightly more prevalent than public sector organizations, with a mean of (3.44).

Second, the comparison here is in the relationship between the six factors and the creativity and innovation. The result will be as follows:

- 1) There is a significant positive relationship between the experimentation and the creativity and innovation in Bahraini public and private sector organizations, and with a strong correlation of (0.735); while the private sector organizations, with a mean of (0.760), are stronger than the public sector organizations, with a mean of (0.721).
- 2) There is a significant positive relationship between the feedback and the creativity and innovation in Bahraini public and private sector organizations, and with a moderate correlation of (0.469); while the private sector organizations, with a mean of (0.515), are stronger than the public sector organizations, with a mean of (0.323).
- 3) There is a significant positive relationship between the motivation and the creativity and innovation in all Bahraini public and private sector organizations, and with a strong correlation of (0.627); while the public sector organizations,

with a mean of (0.655), are stronger than the private sector organizations, with a mean of (0.563).

- 4) There is a significant positive relationship between the learning and the creativity and innovation in Bahraini public and private sector organizations, and with a strong correlation of (0.627); while the public sector organizations, with a mean of (0.551), are stronger than the private sector organizations, with a mean of (0.409).
- 5) There is a significant positive relationship between the responding to low performers and the creativity and innovation in Bahraini public and private sector organizations, and with a moderate correlation of (0.437); while the private sector organizations, with a mean of (0.542), are stronger than the public sector organizations, with a mean of (0.387).
- 6) There is a significant positive relationship between the budget constraints and the creativity and innovation in Bahraini public and private sector organizations, and with a strong correlation of (0.354); while the public sector organizations, with a mean of (0.355), are stronger than the private sector organizations, with a mean of (0.328).

Third, the last comparison is detecting the level of awareness of creativity and innovation in Bahraini organizations. The result will be as follows:

- 1) The level of awareness of employees in Bahraini public and private sector organizations has a mean value of (7.00), which indicates a high degree; while private sector organizations, with a mean value of (7.10), are slightly higher than the awareness of the public sector, with a mean value of (6.98).

4.2. Discussion and conclusion:

Creativity and innovation are the few issues that have become obsolete around the world, given their critical relevance to leaders, communities, nations, and eventually all of humanity. This study attempts to give evidence of what creativity and innovation are, their global importance to people, and how to reach them through the proposed drivers. This study examines the effects of the six drivers of creativity and innovation proposed by Sahni et al., (2013) and Demircioglu & Audretsch, (2017) on the potential for creativity and innovation to occur. The results indicate that the factors of experimentation, responding to low performers, feedback, motivation, learning, and budget constraints are positively associated with the emergence of creativity and innovation in public sector organizations. Also, all the factors influencing the occurrence of creativity and innovation are present to a high degree in public sector organizations.

This research assumes several hypotheses, and the results of these hypotheses are all acceptable. There is a significant positive relationship between all six factors and the creativity and innovation in Bahraini public and private sector organizations.

This study will contribute in the field of innovation and creativity studies, especially in Bahrain, and it will support some comparisons between the public sector and the private sector. When desiring to compare the presence of these factors in the organizations of the public and private sectors, it will be noted that the private sector is present in them slightly more than the public sector. The high presence of creativity and innovation in private sector organizations, slightly more than in the public sector, is due to the increased level of awareness of these drivers among private sector employees. This indicates that the public sector is in

continuous development in carrying out creativity and innovation drivers and has reached an imminent approach to the private sector, which was the first to enter this field, as previously mentioned. However, public sector organizations must continue to spread awareness to carry out these drivers and compete with the private sector in this field for development to increase, and from the advancement of these organizations, the country will rise and prosper.

Some factors have a significant positive impact and care must be taken to increase and continue them, such as experimentation and motivation, and other factors have shown a positive but simple impact, such as budget constraints, on the emergence of creativity and innovation in organizations. As for the remaining three factors, training, feedback, and responding to low performers, they have a medium positive effect. Care must be taken to find a proper way to increase this impact on creativity and innovation, or to reduce it if it no longer has a greater effect.

As was previously mentioned, there are three categories of the six drivers: the first is focused on the employee's performance and includes experimentation, motivation, and learning; the second is focused on the manager's performance in the organization and includes the manager's response to low performers and feedback. The third category focuses on the budget constraints that the organization or government has. According to the findings, employee drivers (the first category) have a stronger influence on the prevalence of creativity and innovation. The impact of managers and organizations (second and third categories) on the emergence of creativity and innovation is still positive and statistically significant, but it is little. As a result, concentrating on employees rather than management and the organization might lead to greater innovation returns. Politicians are advised to allow employees influence over the innovation

process because most inventions were implemented by employees themselves (Torugsa & Arundel, 2016; Borrins, 2001).

This study added to the creation of a model of creativity and innovation drivers for public sector organizations in Bahrain. Also, when determining a specific type of motivation (intrinsic motivation), a type of learning (learning organizations) to measure the extent of its impact on the occurrence of creativity and innovation. Also, the existence of a comparison between public and private sector organizations gives great importance and an attractive topic for researchers in this regard. We also learned what factors have the most and least influence on the occurrence of creative and innovative activities. There are some differences between the results of this study and the previous studies found in the literature review because the studies took place in a different environment and at a different time and identifying a specific type of respondent to the study led to a difference in the results, but these differences are very simple, especially with the studies that are consistent with the principles of this study, which I used it in preparing this study (Sahni et al., 2013; Demircioglu & Audretsch, 2017).

4.3. Research limitations and future studies:

- a) It is difficult for researchers in this specialty to search for and find this data easily.
- b) There are several types of creativity and innovation drivers are important in the development process of any organization. These drivers vary among organizations depending on the nature of their missions, and it is difficult to categorize all influential creativity and innovation drivers properly (de Vries, 2014).

- c) It is difficult to identify and understand some innovative concepts for some employees and may be important exclusively for heads of public or private organizations who practice innovative and creative activities.
- d) Difficulty of solving the questionnaire is due to the fact that it contains vocabulary that is not easy for ordinary people except for specialists in this field. Therefore, researchers should simplify the questions as much as possible in future studies.
- e) The research in this specialty requires to be supported by qualitative research to get deeper insights into different factors in the interviews.
- f) Answering the study's survey on social media without seeing most of the respondents directly and not being sure of fully understanding the questions may reduce the percentage of credibility and reliability in some of the final results of this study.
- g) It is better to choose institutions that are famous for implementing these creative drivers so that the answers will be more accurate and easier to understand.
- h) Making surveys in specific organizations or ministries is recommended to see how different employees at various levels and backgrounds in the same entity perceive creativity and innovation drivers.
- i) The number of respondents to this study's questionnaire, given that the number of public and private sector employees is unknown, is less than the number required to conduct this study in an ideal manner. It is necessary to take a large segment of respondents to conduct this type of study.

4.4. Practical implications:

- a) It is possible to use the results of the comparison between the public and private sectors of this study as a living example in Bahrain that can build other hypotheses and objectives for future studies.
- b) It is possible to conduct studies focusing on employee creativity, which leads to greater returns on innovation, according to the results of this study, instead of focusing on management and the organization.
- c) Experimentation and motivation are the drivers that have the highest impact on the occurrence of creative and innovative activities in public and private sector institutions. Future researchers must consider ways to develop the use of these two drivers to reap more excellent results.
- d) The results of this study indicate that there is a relationship between the six drivers and the occurrence of creativity and innovation. In the future, research must be done for other drivers for the occurrence these activities.
- e) It was found that employees' awareness of the drivers for creativity and innovation has a clear role in spreading it in the organization, so additional activities and efforts had to be undertaken to increase support for this awareness.

4.5. Recommendations:

- ✓ Because entrepreneurship and business are the major forces behind creativity and innovation, improving the business climate is important.
- ✓ More innovation, would increase competitiveness and encourage the transfer of knowledge and skills into the country if rules were hospitable and connected to fewer obstacles to commerce and foreign direct investments.

- ✓ Distributing some successful models to employees in creativity and innovation.
- ✓ Participation of employees in the challenges and goals of the organization, sharing results and profits with them, and making them feel that they are in the same boat together.
- ✓ Introducing employees to innovation and its importance before starting it will encourage them to do it.
- ✓ Create other studies based on new factors such as leadership, passion for creativity, job satisfaction, GDP per capita, teamwork, avoidance of work under pressure, spreading positivity, enjoyment of work, religious concern, stability at work, competition, and government policies encouraging innovation.
- ✓ Contacting government institutions outside Bahrain to learn new innovative drivers.
- ✓ Do periodic meetings that focus on creativity and brainstorming.
- ✓ Participate employees in creative competitions.
- ✓ Create a Search and Development (S&D) section in the company.
- ✓ Creating a mechanism to attract innovators in the military field for creativity and innovation without any restrictions.
- ✓ If the global innovation index of the country is high will encourage the innovation of the public sector.
- ✓ Increasing interest from public sector organizations in the government innovation competition (Fikrah).

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UNIVERSITY OF BAHRAIN
College of Business Administration
Department of Management and Marketing

Questionnaire covering letter

Awareness and drivers of creativity and innovation in public sector organization: an empirical investigation from the both public and private employees.

Dear sir/madam,

You are invited to participate in this survey as a part of a research project entitled “Awareness and drivers of creativity and innovation in public sector organization: an empirical investigation from the both public and private employees”. This questionnaire is a part of a study conducted to fulfill the master’s degree requirement in Business Administration from the University of Bahrain. This research aims to conduct the empirical evidence measure the influence of creativity and innovation drivers in the public sector in the kingdom of Bahrain. They are experimentation, responding to low-performers, feedback, motivations, learning and budget constraints.

The questionnaire is fully anonymous, therefore you are not required to fill it your name out. I hope you will feel comfortable answering honestly. All of your responses will be kept strictly confidential and will not be disclosed to any third party and used just for this study. The survey consists of 7 parts containing 46 questions. I would appreciate it if you could spend a few minutes filling out the given questionnaire as completely and accurately as possible. The accuracy of your response would have a major impact on the results of this study.

Thank you for your time and assistance.

Student Name: Jassim Ebrahim Aljaber.

Supervisor’s Name: Dr. Ali Bin Khalifa Al-Khalifa.

Appendices

The questionnaire:

Section One: Personal and Organizational Data

Please place (☐) at the appropriate answer:

1.1 Gender: ☐ Male ☐ Female

1.2 Age: ☐ Below 20 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60 and above

1.3 Nationality: ☐ Bahraini ☐ Non-Bahraini

1.4 Marital status:

☐ Married ☐ Single ☐ Widowed ☐ Divorced

1.5 Education Level:

☐ Less than High School ☐ High school ☐ Diploma

☐ bachelor ☐ Masters ☐ PhD

1.6 Do you currently work in the kingdom of Bahrain? ☐ yes ☐ No

1.7 Field of study: ☐ Public sector ☐ Private sector ☐ Other: Specify _____

1.8 Job type:

☐ Business ☐ Ministry of interior ☐ Other military institution ☐ Health ☐ Bank

☐ Education ☐ Industry ☐ Judiciary ☐ Communication ☐ Others: -----

1.9 Overall years of experience:

☐ Less than 5 years ☐ 5 – 9 years ☐ 10 -14 years

☐ 15 – 19 years ☐ 20 years or more ☐ Retired

1.10 Job Position: ☐ Manager / Supervisor position ☐ Non managerial position

1.11 Agency size: ☐ Small (< 251) ☐ Medium (251–1000) ☐ Large (1000 +)

1.12 The degree of your awareness of creativity and innovation drivers:

Unaware

Aware

☐0 ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10

1.13 This study suggest six drivers impact on creativity and innovation (experimentation, responding to low-performers, feedback, motivations, learning and budget constraints), Do you suggest another factor (if possible)?

Section two: Variable used in the study:

Please use the following scale to indicate your level of agreement (based on your judgment) by placing a tick (✓) in the appropriate response:

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

Variable 1: Creativity and innovation (DV):					
Statement	5	4	3	2	1
1. In the last year, my organization implement of any innovative and creative activity.					
2. Employees of the organization are fully aware of the innovative and creative activities established in our organization.					
3. My organization provides a clear understanding of the main objectives and innovative plans for the employees.					
4. My organization asks the employees to participate in the innovative and creative activities.					
5. There are several constrains in order to implement innovative and creative activities in my organization.					
6. My organization will incur many losses					

and threats if the innovation and creative plans are not implemented.					
Variable 2: Experimentation (IV1):					
Statement	5	4	3	2	1
1. In my organization, I have a choice in deciding how I do my work.					
2. Employees have enough time and resources to try new ideas.					
3. My organization provides opportunities to increase knowledge and experience.					
4. My organization is cautious in implementing of any innovative and creative activities to avoid errors.					
5. My organization defends for innovative employees when mistakes happen at work.					
6. When experimenting with innovative and creative activities, there is a feeling of great pleasure and excitement while doing them.					
7. Space, openness, and deregulation are essential elements that permit an organization's employees to experiment and innovate.					
8. Employees tend to work best in organizations that encourage experimentation and innovation.					

Variable 3: Feedback (IV2):					
Statement	5	4	3	2	1
1. I receive adequate feedback on my performance to enable me to deliver required results.					
2. My supervisor provides me with regular and constructive feedback.					
3. Feedback contributes to providing a positive impact on the performance of employees and their impressions on the innovative and creative work.					
4. Without constructive feedback, it will reduce employees' desire for implementing innovative and creative activities.					
Variable 4: Motivation (IV3)					
Statement	5	4	3	2	1
1. My organization motivates me to achieve its objectives.					
2. My organization motivates me to do the best in my job.					
3. My organization uses innovative and creative activities for promotions, bonuses and training selections.					
4. My organization relies on innovative and creative activities in evaluating the performance of employees.					

5. My organization motivates the culture of creativity and innovation.					
6. Giving employees appropriate trust and freedom of decision-making contributes to improving their performance.					
7. Producing a large number of innovative products may increase employee motivation to improve performance.					
8. My organization encourages non-material incentives to motivate employees towards creative and innovative activities.					
9. My organization motivates me to participate in the government innovation competition in the Kingdom of Bahrain (Fikrah program).					
10. My leader is eager to create an innovative climate in my organization.					
Variable 5: Learning (IV4)					
Statement	5	4	3	2	1
1. My organization provides formal training activities.					
2. My organization has clear policies and training programs to do innovative and creative activities in the future.					
3. My organization provides excellent training path for new employees.					

4. My organization identifies training needs to conduct innovative and creative activities.					
5. My organization conducts specialized and intensive training in extracting the innovative efforts and ideas of the employees.					
Variable 6: Responding to low performers (IV5)					
Statement	5	4	3	2	1
1. My organization measures employee performance based on the achievement of the organization's goals and results.					
2. My supervisor appropriately deals with employees that perform poorly.					
3. My organization deals with underperformance effectively.					
4. Failure to respond appropriately to underperforming employees affects the morale and performance of other employees at work.					
5. My organization uses strict punishments for employees with low performance and innovation.					
6. Honoring outstanding employees will motivate low-performing employees to improve their performance.					
Variable 7: Budget Constraints (IV6)					

Statement	5	4	3	2	1
1. The abundance of resources and a good budget make the door open to the implementation of all innovative plans.					
2. Innovative activities increases if the budget constraints and resource scarcity increase.					
3. My organization facilitates new methods to improve quality and cost.					
4. My organization is using all available resources to do its work well.					
5. My organization is spending appropriately on innovative activities priorities.					
6. Many supervisors in organizations tend to decrease the budget to a minimum when it comes to innovative issues.					