The Impact of Facilitating Conditions on Innovation Readiness in the Dubai Public Sector

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Abstract. The purpose of this paper is to analyze the level of innovation readiness in Dubai's public sector by taking a critical look at the current facilitating conditions, analyzing the gaps that arise with the lack of various innovations in place, and offering recommendations to remedy the problem. This study uses secondary sources of information by selecting peer-reviewed journal articles. Given that multiple sources had to be used, the study needed to be cross-sectional. The search process for the articles included the use of relevant terms such as "innovation readiness," "facilitating conditions," as well as "Dubai Public Sector." The researcher filtered the results from the potential articles that surfaced and, after filtering, ended up with 15 peer-reviewed journal articles that were now used for the study. The research framework for this study was divided into two sections: the theoretical framework and the conceptual framework. The theoretical framework gave an in-depth overview of facilitating conditions, innovation readiness in the Dubai public sector, and major theories and concepts affecting these two fields. The conceptual framework proposes technological acceptances to cohabitate quality innovation readiness in the Dubai public sector. The intention to use innovation readiness is positively impacted by facilitating situations, but the effect is marginal after the initial usage. As a result, the Model suggests that conducive environments have an immediate, considerable impact on user behavior.

Keywords: Innovation Readiness, Facilitating Conditions, Theoretical Framework, Conceptual Framework, The Unified Theory of Acceptance.

1. Introduction

Innovation readiness focuses on harnessing factors such as the development of ideas, the acquisition of resources and their allocation, and the implementation of the projects (Ojiako, 2022). A country's level of innovation readiness is heavily determined by how well the leadership invests its time and resources to develop the innovation sector. Other factors include technological advancement and the availability of a conducive environment favoring innovation (Chipulu, 2022).

1.1. Problem Statement and Rationale

Multiple organizations in Dubai have innovative advances, given the UAE's exposure to resources, especially regarding capital and corporate influence. However, these organizations need to be made aware of the existing facilitating conditions that can be used to support their technological advancements. **Th**is paper aims to 1) identify the impact of facilitating factors on innovation readiness in the Dubai public sector and 2) identify the gaps in innovation that arise when these facilitating factors are ignored, as is the case right now. **The focus** of this paper is on 1) How might the Dubai public sector make use of the current facilitating factors to boost their level of innovation readiness? **The result** of this research will be used as 1) a guide for Dubai public sector organizations to implement new technologies based on the assessment of how different facilitating factors influence the current technologies that they use.

1.2. Overview of the Paper

This paper tabulates different theories and concepts that affect facilitating conditions and innovation readiness as a remedy to Dubai organizations' obliviousness. This study uses peer-reviewed journal articles to garner the information, with the binding terms of article research being 'innovation readiness,' 'facilitating factors', and 'Dubai public sector.

2. Theoretical Background

2.1. Innovation Readiness/Facilitating Conditions

Innovation readiness can be defined as the degree to which an organization is prepared to identify, develop, and implement innovative ideas and strategies (Tidd & Bessant, 2013). It measures an organization's ability to generate and execute creative ideas that create value for its stakeholders. Facilitating conditions be internal and external to an organization, including factors such as leadership support, organizational culture, resources, knowledge and skills, collaboration, technology, and market conditions (Bessant & Tidd, 2011).\
Types of Facilitating Conditions

2.2.1. Leadership Support
Leadership support entails an organization getting assistance from its leaders while bearing a part of the workload. Leadership support is a crucial factor in fostering innovation readiness in an organization. Leaders can provide a clear vision and mission, and create an enabling environment promoting innovation.

2.2.2. Resource Availability
Resource availability is money and materials being ready for use by a person or organization. Adequate resources, including funding, technology, and human capital, are necessary to develop and implement innovative ideas. In addition, knowledge and skills are vital factors in facilitating innovation readiness (Patterson et al., 2009).

2.2.3. Collaboration

Collaboration is engaging people to work hand-in-hand on a task that involves more than one person. As a facilitating condition, collaboration can occur internally, between departments and teams within an organization, and externally, between organizations, customers, and suppliers (Assimakopoulos, 2007).

2.2.4. Marketing Conditions

Marketing conditions like customer needs and preferences, regulatory frameworks, and competitive pressures can facilitate innovation readiness. Organizations responsive to market changes and customer demands are better positioned to develop and implement innovative solutions that meet these needs (Harrington & Voehl, 2016).

2.2. Theories/Concepts Regarding Facilitating Conditions

2.3.1. Diffusion of Innovation Theory (DOI)

Diffusion of Innovation Theory (DOI) is a theory that explains how innovations spread through society. The Theory proposes that the adoption of innovations is influenced by several factors, including the characteristics of the innovation itself, the communication channels through which it is promoted, and the adopters' characteristics (Dearing & Cox, 2018).

2.3.2. Absorptive Capacity

Absorptive capacity refers to an organization's ability to identify, acquire, and use external knowledge (Bos-Brouwers, 2010). Organizations with high absorptive capacity are better positioned to identify and incorporate new ideas and technologies into their operations, which can boost their innovation readiness (Bogers et al., 2017). This concept is closely related to open innovation, which refers to leveraging external sources of innovation to complement an organization's internal capabilities.

2.3.3. Innovation Culture

Innovation culture refers to an organization's shared values, attitudes, and behavior supporting Innovation (Patterson et al., 2009). Innovation culture can include a variety of factors, such as the level of risk tolerance within the organization, the degree of autonomy given to employees, and the extent to which innovation is recognized and rewarded.

2.3. Measuring Innovation Readiness

One approach to measuring innovation readiness is to use a survey-based assessment tool, such as the Innovation Readiness Assessment developed by NESTA (Patterson et al., 2009). This tool assesses various factors related to innovation readiness, such as the organization's ability to generate and implement new ideas, the extent to which management supports innovation, and the organization's openness to external knowledge and ideas. Other approaches to measuring innovation readiness focus on more specific aspects of the concept. For example, some researchers have developed measures of an organization's absorptive capacity, such as the Absorptive Capacity Index developed by Lane and Lubatkin (1998).

2.4. Theories and Concepts on Innovation Readiness

2.5.1. Diffusion of Innovation Theory

This Theory focuses on how the adoption and acceptance of innovation occur over time and through different stages by different groups or individuals. This Theory can help identify the factors that influence the adoption of innovation in the public sector of Dubai. It identifies five categories of adopters: innovators, early adopters, the early majority, the late majority, and laggards (Dearing & Cox, 2018).

2.5.2. Role of organizational culture

Organizational culture can create an environment where employees feel comfortable sharing new ideas and taking calculated risks without fear of criticism or punishment. A culture of innovation promotes collaboration and cross-functional communication, which can lead to sharing knowledge and insights that can spark new ideas and approaches (Schein, 2010).

2.5.3. Open Innovation Theory

Open innovation refers to collaborating with external stakeholders, such as customers, suppliers, and partners, to generate and implement innovative ideas (Bogers et al., 2017). Open innovation practices can enhance an organization's readiness by facilitating access to diverse knowledge and expertise. Organizations can tap into a broader range of expertise, knowledge, and resources than they could access through their internal resources alone.

2.5.4. Technological Communities

Technological communities and networks can provide a platform for individuals to share ideas and knowledge, collaborate, and learn from each other (Assimakopoulos, 2007). These communities and networks can take various forms, such as industry associations, professional organizations, academic research networks, and online communities. Through these communities and networks, organizations can participate in innovative ecosystems that span multiple sectors and industries.

2.5.5. Issues and arguments (Key questions and Problems that have been addressed to date).

The main issue is that there is no universally agreed-upon definition of innovation readiness, which creates challenges in measuring and assessing it. Various facilitating conditions, such as leadership support, organizational culture, and resource availability, can significantly influence an organization's innovation readiness. The argument that emerged is that innovation readiness is a critical concept for organizations seeking to thrive in today's rapidly changing business environment. Organizations must create a supportive culture that values experimentation, risk-taking, and continuous learning to achieve innovation readiness.

2.5. Key Concepts and their Relationships.

Several theories and concepts provide insights into facilitating conditions and their role in promoting innovation readiness. For example, the diffusion of innovation theory suggests that adopting new ideas depends on the innovation's relative advantage, compatibility, complexity, trialability, and observability. The social learning theory highlights the importance of social networks and communication channels in facilitating knowledge transfer and innovation.

3. Framework

3.1. Theoretical framework

According to the Unified Theory of Acceptance and Use of Technology, the actual use of technology is influenced by behavioral intention. The primary determinant of the anticipated likelihood of adopting the technology is the direct impact of four primary constructs: performance expectancy, social influence, effort expectancy, and facilitating conditions (our primary independent variable). Facilitating conditions are the levels to which individuals perceive how important it is that they should use the new system introduced. These conditions directly impact people's intent to use technology, although, after initial use, their effects become non-significant. The predictors of intention (otherwise known as facilitating conditions) include age, voluntariness to use technology, and the workforce's level of skills and experiences.

The Unified Theory of Acceptance and Use of Technology provides us insight into the various forms of technology by comparing prominent technology acceptance theories. Such theories include

the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Extended Technology Acceptance Model (TAM2), Innovation Diffusion Theory, Motivational Model, and Social Cognitive Theory, among others. As discussed earlier, the Model also lists the main facilitating conditions that affect innovation: age, voluntariness to use technology, and level of skills and experiences of the workforce (Ahmad, 2015).

The other important factor affecting innovation readiness is the level of skills and experience. While many empirical studies have examined the effects of technological advancements, mainly digital technology, wage outcomes, and economic growth, very few have concentrated on how these links are mediated by the impact of technology on job tasks, worker-up skills, and skills mismatch (Ahmad, 2015). Therefore, workers' skills and experience levels directly affect innovation readiness in that fewer skills and knowledge often negatively affect technological advancements. The Theory of Reasoned Action attempts to explain this by stating that human behavior can be depicted by three main cognitive components, skills and attitudes.

The third facilitating factor to innovation readiness is freedom of use (voluntariness). This refers to the degree to which the utilization of innovation is seen as being out of free will. This factor is greatly supported by the Theory of Planned Behavior (TPB), which indicates that innovation voluntariness is affected by opportunities, skills, and available resources needed to achieve the desired outcome (Ayaz & Yanartaş, 2020). An individual's attitude towards technology is very relevant for maximum efficiency. The table below shows a summary of the independent variable.

Table 1: Final shape for the Independent Variable

Factor	Explanation/Theory	Level 2 factors affecting the three main factors discussed	References
Age	The effects of age are usually analyzed in the context of productivity estimates. Therefore, this means that the younger population has more positive input on innovation than the older population.	**Culture** – as new technology is introduced, the young embrace it faster than the old population because the aging people do not want to or are reluctant to let go of their traditional practices being replaced by innovation. **Desire to age in place** – The older population prefers to stay in their current residences to maintain memories and the quality of their neighborhoods **Familiarity with the technology** – for older people,	Peek, S.T., Wouters, E.J., Van Hoof, J., Luijkx, K.G., Boeije, H.R. and Vrijhoef, H.J., 2014. Factors influencing acceptance of technology for aging in place: a systematic review. International journal of medical informatics, 83(4), pp.235-248.

		it is easier to adapt to the technology they are familiar with	
Level of skills and experiences	The Theory in support of this is the Theory of Reasoned Action. The levels of skills and experience by workers directly affect innovation readiness in that fewer skills and knowledge often negatively affect technological advancements.	**Ease of use** – Technology that is easier to use is usually more acceptable **Familiarity with technology** – when individuals are familiar with the technology, it is easier to adapt to it as compared to a new form that they have never seen **Level of training** – the degree to which someone's skills greatly influence how they will utilize that technology and the readiness to which they are prepared to use or accept it.	Ahmad, M.I., (2015). Unified Theory of acceptance and use of technology (UTAUT). LinkedIn Pulse, pp.179–211.
Voluntariness to use	This refers to the degree to which the utilization of innovation is seen as being out of free will. This factor is greatly supported by the Theory of Planned Behavior (TPB),	**Availability of resources** – this dramatically affects an individual's ability to use technology since it first has to be available for it to be used. **Opportunities available** – there should be opportunities available for individuals to be willing to embrace innovation.	Ayaz, A. and Yanartaş, M., 2020. An analysis of the unified Theory of acceptance and use of technology theory (UTAUT): Acceptance of

which indicates that innovation voluntariness is affected by opportunities, skills, and available resources needed to achieve the desired outcome. An individual's attitude towards technology is very relevant for maximum efficiency.	**People's perceptions** – The knowledge surrounding what people see innovation as will affect how they respond to it	electronic document management system (EDMS). Computers in Human Behavior Reports, 2, p.100032.

Table 2: Final shape for the dependent variable

Factor	Explanation/Theory	Level 2 factors affecting the three main factors	References
Performance expectancy	This is the degree to which individuals believe that utilizing the system will help them to attain better performance.	**Level of technology acceptance** – the group of trust people have in technology greatly influences their level of acceptance, as low trust leads to quiet acceptance and vice versa. **Perceived service quality** – if the said form of innovation is expected to have excellent service quality, then the	Ahmad, M.I., (2015). Unified Theory of acceptance and use of technology (UTAUT). LinkedIn Pulse, pp.179–211.

		performance expectancy is high, giving it a greater chance. **Effectiveness of the technology** – effective technology will be readily accepted compared to non-effective technology.	
Effort expectancy	This is the ease with which the use of information systems is utilized. The effects become non-significant after long-term use of technology.	**Ease of use -** Technology that is easier to use is usually more acceptable **The complexity of the form of innovation** – complex forms of technology are not easy to adapt to **Level of infrastructure** – well-developed areas may find it easier to use different forms of technology effectively compared to non-developed areas	Ayaz, A. and Yanartaş, M., 2020. An analysis of the unified Theory of acceptance and use of technology theory (UTAUT): Acceptance of electronic document management system (EDMS). Computers in Human Behavior Reports, 2, p.100032.

| Social influence | This is the degree to which the population perceives that essential others believe they should use the new system. | **Myths and misconceptions surrounding technology** – people who believe in the harmful myths surrounding technology find it hard to embrace it. **Cultural background** – various cultures determine whether individuals are ready to accept innovation. **People's perceptions** - The knowledge surrounding what people see innovation as will affect how they respond to it | Ayaz, A. and Yanartaş, M., 2020. An analysis of the unified Theory of acceptance and use of technology theory (UTAUT): Acceptance of electronic document management system (EDMS). Computers in Human Behavior Reports, 2, p.100032. |

3.2. Conceptual Framework

In this essay, we have examined and critically assessed current ideas of technology acceptance. To create an extended acceptance model of technology services, relevant constructs from existing models were first discussed in the context of developing mobile technologies and services. This discussion included consideration of technology adoption models, motivation theory, innovation diffusion theory, and the domestication approach.

Numerous competing theoretical models exist in the literature on innovation acceptance and adoption, each with a distinct focus and evaluated in various settings. However, only some of these models try to develop theories that can forecast the degree of acceptance and adoption and explain how and why innovations or technologies are adopted. The success of implementation at the organizational level is the focus of other research streams. In contrast, one stream focuses on individual and social groups' acceptability and adoption of innovation. Some previously empirically studied models, including the Motivational Model, the Reasoned Action, and the Theory of Planned Behavior were derived from social psychology. In contrast, others, including the Innovation Diffusion Theory and the Social Cognitive Theory, were derived from sociology. Others, like the Technology Acceptance Model, apply the concepts of technology adoption in a more concentrated way.

Having information and the capacity to use it gives you a competitive advantage. Therefore, a shift from scientific and technologically driven innovation processes to new forms of knowledge production

that are less heavily influenced by technology is a reflection of the technology-based economy is very vital. The notion of innovation explored in a knowledge-based economy goes much beyond the linear or chain linkage models that have long been employed in innovation theory to describe innovation processes in high-tech sectors. Thus, innovation is viewed as an interactive, geographically embedded social learning process that cannot be understood in isolation from its institutional and cultural context.

While technological advancements are crucial for corporate operations, corresponding organizational promotions are essential for the industry's long-term growth and survival. According to certain research studies, the interdisciplinary perspective on innovation systems focuses on comprehending the overall context of the creation, dissemination, adaption, and evaluation of new knowledge, all of which affect innovativeness. Ultimately, the target audience's ability to absorb will determine whether innovation is successfully distributed. The diffusion of innovation is typically influenced by the particular innovation typology, the innovation champions, the time factor for successful distribution, and the ability of the adopters to absorb the innovation. This procedure entails broadcasting information detailing the technology, instruction (conveyed through software), the transmission of knowledge, and the transfer of tools, parts, or raw materials (called hardware).

A crucial relationship exists between innovation, research, and technology development (R&D). This connection, however, is only helpful if there is a way or a system to access the information developed through study and technology. This requires a technology-based approach that can deliver the necessary knowledge to implement innovation. Such a knowledge system must be built following the demands of innovation and the various activities associated with learning. This essay developed an understanding of the technological prerequisites for innovation.

By extending models for innovation and research in terms of convergent technology, the work adds to the body of previous literature. The study recognized the significance of technology in innovations and demonstrated the complexity and breadth of knowledge to enable innovation. The paper's objectives were to examine a framework for understanding, offer a framework for technology, and provide the classic literature published on the subject. Lastly, the framework's organization is based on innovation typologies (strategic and operational advantages), the input of knowledge, personnel, and lab—involvement, and the room for the project's specifics.

4. Discussion

4.1. Research Gaps

4.1.1. Exploring how Organizational Culture can Hinder or Support Innovation Readiness
There is a need to explore how organizational culture can support or hinder innovation readiness. Although studies have recognized the role of corporate culture in fostering innovation, there is a need to examine how specific cultural dimensions can influence innovation readiness. Hofstede and Hofstede (2004) identified six dimensions of national culture that can affect organizational culture, including power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence.

4.1.2. Investigating how SMEs can Enhance Innovation Readiness
Another research gap is the need to investigate how small and medium-sized enterprises (SMEs) can enhance innovation readiness. While innovation is essential for SMEs' growth and survival, they often need more resources and capabilities to develop and implement innovation strategies (Bos-Brouwers, 2010). Therefore, exploring how SMEs can leverage external resources, such as technological communities and networks, is necessary to enhance their innovation readiness (Assimakopoulos, 2007).

4.1.3. Investigating the Relationship between Innovation and Innovation Readiness
The third research gap is the need to investigate the relationship between everyday innovation and innovation readiness. To enhance innovation readiness, Patterson et al. (2009) argued that organizations must encourage everyday innovation, which involves minor incremental improvements in processes,

products, or services. However, there is a need to investigate how everyday innovation can contribute to building an innovation-ready culture and how it can support more radical innovations.

4.2. Expand Existing Literature

Future studies can investigate the role of leadership in fostering innovation readiness. Schein (2010) argued that leadership plays a crucial role in shaping organizational culture, which can either support or hinder innovation. Therefore, future studies can investigate how different leadership styles influence innovation readiness and how leaders can develop innovation strategies and foster an innovation-ready culture. Another way is to explore the open innovation approach to enhance innovation readiness. Open innovation involves collaborating with external partners (Bogers et al., 2017). Future studies can investigate how organizations can leverage open innovation to enhance readiness and manage the challenges associated with open innovation.

4.3. Possible Future Research Questions

Possible research questions that can address the identified research gaps and expand the existing literature on innovation readiness include:

1. How do cultural dimensions influence organizational innovation readiness?
2. How can SMEs leverage technological communities and networks to enhance their innovation readiness?
3. How does innovation contribute to building an innovation-ready culture, and how can it support radical innovations?
4. How does leadership style influence innovation readiness, and how can leaders foster an innovation-ready culture?
5. How can organizations leverage open innovation to enhance their readiness, and how can they manage the challenges associated with open innovation?

5. Conclusion

Most of the current discussion on this subject uses empirical methods, many based on the expert's subjective opinions, to identify jobs or tasks that may be vulnerable to automation. The use of employees' views has received very little consideration up to this point. This study examines the potential effects of technological change on the workforce using a focus on employee perceptions and experiences on the impact of technology on their skill sets. The intention to use is positively influenced by facilitating situations, but the effect is marginal after the initial usage. As a result, the Model suggests that conducive environments have an immediate, considerable impact on user behavior.

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