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Faculty of Graduate Studies

Readiness of the Palestinian Land Authority for Digital Transformation

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I

THESIS APPROVAL

Readiness of the Palestinian Land Authority for Digital Transformation

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Declaration

I declare that the work in this study entitled "Readiness of the Palestinian Land Authority for Digital Transformation'' was carried out by me under the supervision of Dr. Yousef Sabbah, in the Department of Strategic Planning and Fundraising. Also, I declare that the information in this study is the result of my work and has not been presented before in another degree, diploma, or university.

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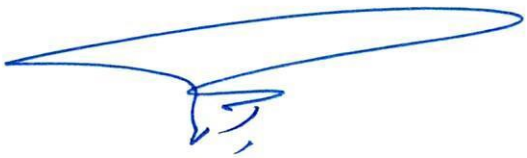
Signature 

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Abbreviation

1.	DX	Digital Transformation
2.	PLA	Palestinian Land Authority
3.	ICT	Information and Communication Technology
4.	IT	Information Technology
5.	DXR	Digital Transformation Readiness
6.	MTIT	Ministry of Telecom and Information Technology
7.	SDG's	Sustainable Development Goals
8.	OECD	Organization of Economic Cooperation and Development
9.	DGRA	Digital Government Readiness Assessment
10.	SPSS	Statistical Package for the Social Sciences.
11.	GG	Gartner Group
12.	WB	World Bank
13.	IoT	Internet of Things
14.	OGD	Open Government Data
15.	E-ID	Citizen Electronic identification
16.	TRL	Technology Readiness Level
17.	DIT	Theory of Diffusion Innovation
18.	TAM	Technology Acceptance Model
19.	AoR	Available of Resource
20.	CSE	Computer -self Efficacy
21.	PAU	Perceived Ability of Use
22.	PIQ	Perceived Information Quality

23.	FB	Functional Benefit
24.	PLF	Perceived Legal Framework
25.	PP	Perceived Privacy
26.	AI	Artificial Intelligence
27.	API	Application Programming Interface

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Abstract

Governments can improve the efficiency of their services and meet their goals by choosing Digital Transformation (DX) as a strategic option. This involves ensuring greater openness, interoperability, and satisfaction among citizens. Despite the great innovations in this domain, which increased expectations regarding (DX) practices, the optimal approaches to adopting and implementing (DX) successfully are still not available. The Palestinian government has begun to replace its traditional services with digital ones. The readiness level for such a successful implementation of DX is the first question for this process. To evaluate the readiness for DX at the Palestinian Land Authority (PLA) which is the case study chosen for this study, the Digital Government Readiness Assessment and Technology Acceptance Models were analyzed to identify the dimensions for assessing DX readiness level. These dimensions were used in this study's approaches. The approaches include a survey-based quantitative survey conducted among the beneficiaries of PLA with a sample size of (152). In addition, an interview-based qualitative was conducted among the (20) senior officers at PLA and the Ministry of Telecom and Information Technology (MTIT).

The results of this study indicate that digital transformation in the PLA needs radical change and great efforts to be implemented. In addition to that, the PLA as a government agency faces many obstacles in this regard on many levels, such as infrastructure, digital transformation plans, human and financial capabilities, etc. This study contributes to bridging this gap by suggesting recommendations for DX as an output that offers insights to help PLA prepare its DX strategy.

On the other hand, the findings of this research study allowed us to outline a national DX framework as a reference model for the public sector. The study also indicates that

digital transformation is a compulsory option at the present time, and the Palestinian government must move forward with its implementation despite the many challenges and obstacles it will face in developing and implementing this transformation.

Keywords: Digital Transformation, Strategy, Readiness, Leadership, Vision, User-Centered Design, Technology Infrastructure, Legislation and Regulation, Cybersecurity, Privacy, Palestinian Land Authority, E-Government.

Chapter One

1 Introduction

This thesis aims to assess readiness for Digital Transformation (DX) at the Palestinian Land Authority (PLA). This study includes theoretical and empirical sections. The empirical section measures the readiness of the Palestinian Land Authority (PLA) toward DX, which was conducted through a survey with the PLA beneficiaries and interviews with the senior officers at the (PLA) and (MTIT). The theoretical section contains an extensive literature review on DX, including the DX concept, enablers, drivers, challenges, strategic planning, and readiness at public organizations.

This chapter introduces the research. It starts with a background in section 1.2. Then, it provides the problem statement, the research questions, the hypothesis, and the significance in sections 1.3, 1.4, 1.5, and 1.6 respectively. After that, sections 1.7, 1.8, and 1.9 go into the research contribution, objectives, and scope. Finally, sections 1.10, 1.11, 1.12, and 1.13 introduce the research design, structure framework, and summary respectively.

1.2 Background

We live in a digital, interconnected world. The quick development of digital technologies has significantly changed the way we work, live, and play during the last few years (Mathieu & Aubrecht, 2018). These technologies include cloud computing, Internet connectivity, wireless network, and most importantly smartphones(Attaran & Woods, 2019). The rate of technological advancement has changed the utilization and behavior of individuals, organizations, and the market structure(Cascio & Montealegre, 2016). Internet-savvy consumers who are digital natives have revolutionized how they

choose, purchase, and consume the products and services available(Ha & Coghill, 2008) Digital transformation (also known as DX in this thesis) is a term used to describe the phenomena where existing organization seek to be technologically advanced (Hess et al., 2016; Sebastian et al., 2017; Singh and Hess, 2017). When organizations use emerging technologies like analytics, mobile, the Internet of Things, and the cloud to improve their operations, there are significant changes that take place. This is referred to as transformation. (Sebastian et al., 2017; Singh and Hess, 2017) emphasize "transformation" rather than "change" to ensure that an organization's DX extends well beyond functional thinking and holistically analyzes the "comprehensiveness of actions" that must be taken to either maximize the benefits or prevent the threats that result from digital technologies (Halpern et al., 2021; Mosallaeipour et al., 2018).

Organizations must be prepared to change with the new digital environment if they want to survive. Different cultures, processes, structures, and strategies are required in the digital era to increase the organization’s capacity for generating new avenues for value generation. (Warner & Wäger, 2019).

To improve transparency and accountability of the services delivered, the Palestinian Government would adopt DX, sharing information online, automating various operations, and communicating electronically with citizens. Several requirements are needed for DX to succeed. Moreover, there are some challenges and threats, which may hinder and delay the DX implementation in Palestine. On the other hand, creating a DX strategy is the best way to ensure the effective creation and implementation of DX. (Kitsios & Mitroulis, 2019) define DX strategy as a “planned action taken to sustainably manage transformation brought on by the integration of digital technologies”.

1.3 Problem Statement

A vital first step to carrying out a successful digital transformation is having a thorough knowledge of the degree of digitalization within the organizations. organizations need to conduct a digital maturity assessment to get a clear image of digital readiness in their organization, according to a report by Westerman et al (2011). The sufficient understanding of the level of digital maturity that will be realized through this study may help to explore possible avenues within the PLA for digital transformation in addition to providing additional background knowledge about DX in the Palestinian context.

Most of the public services at the Palestinian land authority (where currently I am working) are provided in traditional or classical methods to the public. That means each person who wants to get any service or information; He/she must come or visit in person one of the nearest headquarters of the PLA, and sometimes they need to visit the headquarter several times to finalize specific matters or transaction, which leads to waste of time, efforts and cost. As a result, we guess that the Palestinian land authority lacks the use of technological and technical tools, or it is still in its earlier stages, due to the absence of strategies and plans in this regard. These strategies must be studied and developed to help the flexible and gradual digital transformation in providing online public services via websites and mobile applications.

The main role of the PLA is registering and protecting the land property rights of the citizens, ensuring privacy and security for their data. The registering process maintains the ownership of the Palestinian land and protects it from any infringements, including Israeli ones. In addition, it is conducting a settlement of the struggle over ownership, heritage, ownership over commonly shared …etc. Therefore, the PLA has to put much more effort into improving internal operations radically, developing a new electronic

model for delivering e-services by using emergent technology. That is to protect the Palestinian Land and improve the services delivered to the citizens.

However, at the PLA level, few efforts are paid to address the current situation to assess its readiness for DX, which encourages the researcher to focus on this important issue. In order to adopt and implement the DX initiatives and get its benefits. Therefore, the research problem might be further split up into various research questions.

1.4 Research Questions and Hypotheses

The researcher developed the thesis questions based on the main thesis problem. These questions were built based on two models which are (TAM &DGRA). These models will be explained broadly in the following chapters. This study used mixed methodologies which are quantitative and qualitative. In the quantitative approach, the questionnaire was used and built by using TAM MODEL. The qualitative approach used interview-based questions that were built based on DGRA MODEL to meet the qualitative approach objectives.

The Study's Main Question is: What is the level of readiness of the PLA towards DX as a Strategic Choice? Based on this main question, the researcher developed the following minor questions as follow:

1. What are the PLA and MTIT senior officers' viewpoints toward the PLA's readiness for DX?

To find the answers to the question above, the researcher used the DGRA model that contains the dimensions that determine the readiness towards DX in the PLA from the point views of the senior officers in the PLA and MTIT. The DGRA model includes dimensions such as (leadership and governance, user-centered design, public

administration reform, capabilities, culture and skills, technical infrastructure, data infrastructure strategies, legislation and regulation, and digital ecosystem).

2. What are the viewpoints of beneficiaries toward the PLA's readiness for DX?

The researcher developed a questionnaire to investigate the beneficiaries' viewpoints towards DX at the PLA. This questionnaire is built upon the TAM model which contains several variables taken into account to measure the readiness of the PLA beneficiaries. These variables include (availability of resources, computer self-efficacy, perceived ability to use, perceived information quality, perceived functional benefit, perceived legal framework, and perceived privacy).

The following chapters will define the adopted models used in this study, the methodologies, instruments, and analysis of collected data clearly.

3. Are there statistically significant differences among the means of digital transformation readiness at $\alpha <= 0.05$ due to the demographic variables (scientific qualification, gender, and scientific specialization)?

   Research Hypotheses: The researcher developed one main hypothesis as follows: "There are no statistically significant differences among the means of digital transformation readiness at $\alpha <= 0.05$ due to the demographic variables (scientific qualification, gender, and scientific specialization).

1.5 Research Significance

Palestine went through exceptional and difficult circumstances due to the spread of the Corona pandemic locally, regionally, and globally, which led to the suspension of all services provided by the government, including the PLA. PLA provides services to the citizens in a traditional way, in any emergent circumstances this leads to suspensions of services provided, and therefore, wastes more time, effort, and cost.

The aforementioned situation is the main reason behind considering the need to transform the way the PLA provides its services into e-services, that enable the citizens to obtain services using digital devices wherever and whenever they need.

This research provides decision-makers, beneficiaries, and academics with a deep understanding of DX, its concept, drivers and enablers, challenges, and opportunities the public sector considers when transforming its services into digital ones. Additionally, as a case study, the PLA has been taken in this research to address the level of readiness for DX. Therefore, the research defines the main dimensions of readiness at the PLA and its beneficiaries. Moreover, the analysis made by this study provides the decision-makers with a new approach to dealing with DX initiatives by learning its influence, drivers, enablers, opportunities, challenges, and requirements for successful implementation. In this regard, the conclusion and recommendation of the study will assist in developing a successful DX strategy at the PLA.

1.6 Research Contributions

Despite the huge progress at the technological level, unfortunately, the application of new technology in Palestinian public organizations remains in the early stages and requires more thorough research. However, there are no local studies that measure the readiness of the Palestinian public sector for DX, mainly at the PLA. This process aims to identify the requirements needed for adopting e-services at the PLA. Therefore, the recommendations and conclusions of this study have a significant contribution to developing a solid foundation for understanding DX, developing a framework for DX strategic plan, coping with all developments in this regard, and the availability of technology to exploit opportunities and prevent threats. as well as filling the missing gap in the knowledge related to this issue in the Palestinian context.

1.7 Research Objectives

The fundamental objective of this study is to assess readiness for DX at the PLA. In addition, it provides a comprehensive literature review of DX concepts, drivers, enablers, digital transformation readiness, digital challenges and objectives, and digital transformation strategies. synthesizing the body of DX literature creates a basis to assess the PLA's readiness for DX. As a result, this thesis came up with concrete recommendations for practitioners to approach DX, as well as the following:

1- To understand the current strategies towards DX to analyze the current level of digital services delivered to citizens.

2- To measure the readiness of the PLA for DX as a strategic choice.

3- To measure the readiness of beneficiaries to use and benefit from electronic services.

4- To study and define the requirements for DX in the PLA that are clustered into organizational, psychological, technical, political, legal, financial, and economic requirements.

5- It is required to define the predicted strategic trends and requirements as well as a future strategy framework to achieve DX at the PLA.

6- To understand the impact of this strategic choice on service delivery to Palestinian customers.

7-

1.8 Research Scope

As mentioned above, the Quantitative and qualitative approaches are used to achieve these objectives the study objectives. The sample size of the qualitative approach consists of (20) senior officers at the PLA and the Ministry of Telecommunication and Information Technology (MTIT) for interviews. The same person was interviewed more than once as needed. Similarly, the sample size of the quantitative approach consists of

(152) PLA beneficiaries to address the problem from the viewpoint of the beneficiaries. The study was conducted on the PLA, which is in Ramallah. The timeframe of this thesis was identified in 2020/2021, where several obstacles hindered the researcher from completing the research at the determined time including:

1- The topic's novelty and the limited Palestinian studies on similar topics.
2- The determined time plan was not sufficient to complete the research.
3- Beneficiaries' Responses to the questionnaire's items seriously and accurately were challenging.

1.9 Research Design

The mixed method is considered the best approach to address the research problem and achieving its goals. This method combined both quantitative and qualitative methods. The researcher's role is to deeply understand the current situation related to the extent of the PLA's readiness towards DX by gathering and analyzing data to reach potential results.

The researcher performed an intensive literature review of relevant studies to have a deep understanding of this phenomenon. The researcher collected the data using several instruments such as questionnaires and interviews with senior officers who have sufficient experience in this domain, as well as revision of the PLA's documents, policies, and strategies. The data were analyzed utilizing the statistical package (SPSS) as well as content and discourse analysis to provide the researcher with full perceptions of the actual situation and to which extent the PLA is ready to adopt DX. Besides, it focused on the challenges that hinder the progress toward smooth digital transformation.

finally, it concluded with specific recommendations and responded to the study questions.

1.10 Research Structure

There are five chapters in the study: (1) Introduction, (2) Theoretical Framework and Literature Review, (3) Research Methodology, (4) Research Results, and (5) Conclusion and Recommendations. In particular, the second chapter of this thesis presents a detailed literature review on relevant recent previous studies, to give readers a solid foundation and comprehension of DX, its opportunities, challenges, drivers and enablers, objectives, and key dimensions of readiness and digital innovation. Chapter 3 presents the research methodologies, data collection, and data analysis. Chapter 4 presents the results and findings of the empirical part of the study. Finally, chapter 5 provides a discussion of the study results. It concludes the answers to the research questions and gives concrete recommendations.

1.11 Research Framework

This study focuses on measuring the readiness for DX at the PLA and determines the key dimensions of DX readiness that were utilized throughout the study. To link this topic together, Figure (1.1) compiles the main phases of the study and works as a foundation for an empirical part.

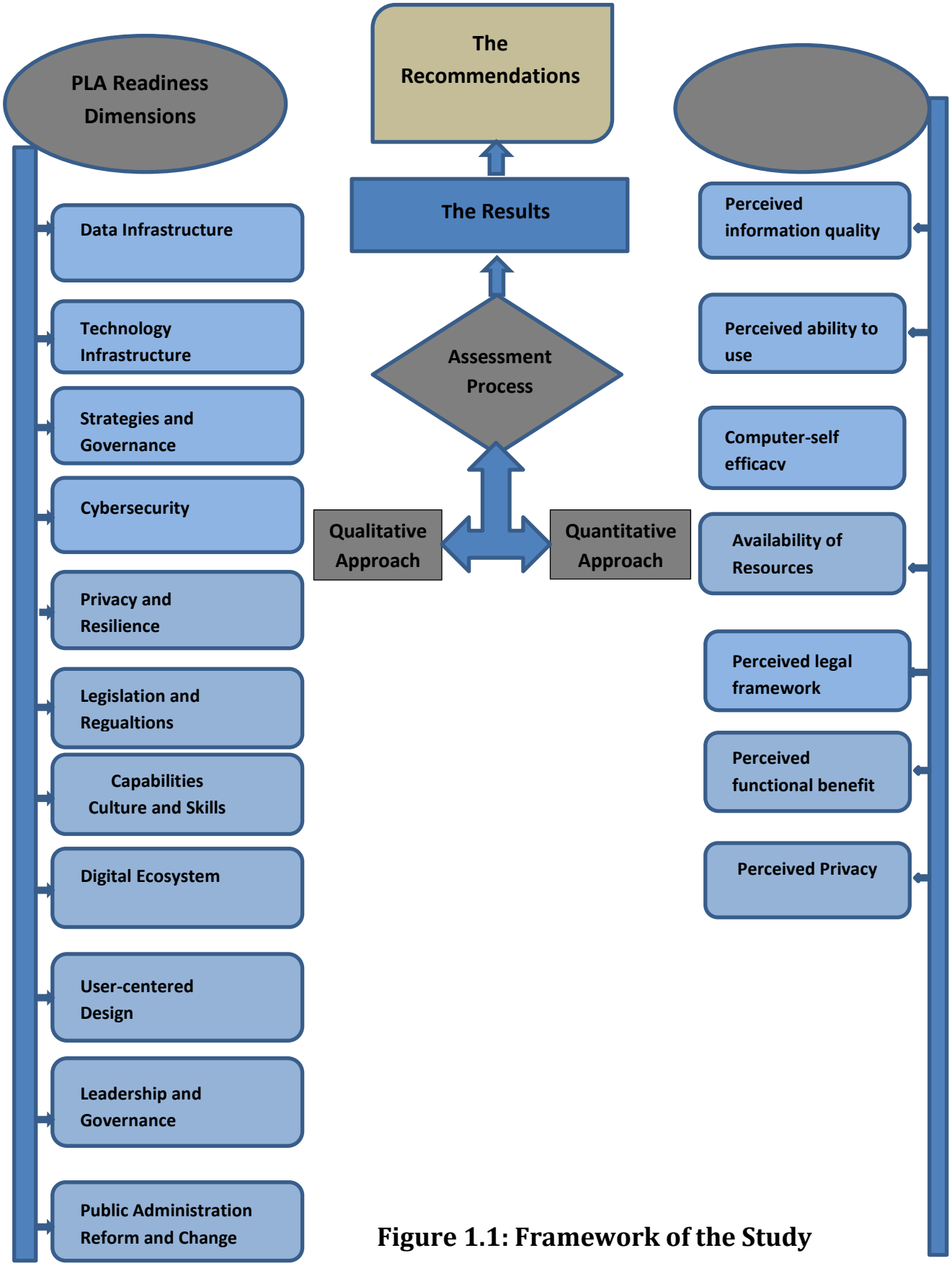

Figure 1.1: Framework of the Study

Chapter Two

Literature Review and Empirical Studies

2.1 Introduction

This chapter focuses on presenting a literature review on the DX, a theoretical background including essential definitions and concepts. The sections of this chapter will be stated as follows: section 1 conceptualizes DX, e-government, and DX strategy in sections 2 and, 3 respectively. Section 4 presents DX readiness. Finally, in section 10 the chapter presents previous studies.

2.2 Fourth Revolution (Industry 4.0)

Manufacturing systems and services have recently faced significant challenges because of the need to connect and coordinate disruptive technologies including networking and communication (the Industrial Internet), embedded systems (Cyber-Physical Systems), adaptive robotics, data analytics, artificial intelligence, and additive manufacturing (Mosallaeipour and colleagues, 2018). These integrated and communicative technologies constituted what is known as the "4.0" or Fourth Industrial Revolution. It was first announced by the German government as one of the major projects and symbolizes a new industrial revolution.(Mosallaeipour et al., 2018).

Industry 4.0 is characterized as a fundamental transformation enabled by Internet technologies to develop intelligent goods and services (Wollschlaeger M, Sauter T, Jasperneite J, 2017). Besides, Industry 4.0 is a base for the re-industrialization of Europe. In order to successfully adapt, new technologies like big data analytics, autonomous (adaptive) robotics, cyber-physical infrastructure, simulation, horizontal

and vertical integration, industrial Internet, cloud systems, additive manufacturing, and augmented reality are required (Mosallaeipour et al., 2018) strategic workforce planning that is in line with Sustainable Development Goal (SDG) 8, which calls for the promotion of sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, is necessary for the implementation of Industry 4.0 (Mosallaeipour et al., 2018). Additionally, the essential factors to guide technological advancements are building a suitable organizational structure, developing collaborations, and exchanging technology standardization. Consequently, effective management of the technological transformation process in both manufacturing and services will arise from the successful adoption and implementation of Industry 4.0 (Oztemel & Gursev, 2020).

2.3 E-Government

The term "e-government" has largely been used to study changes in than concentrating on developing new business models, e-government efforts are being made to increase the effectiveness and accessibility of service delivery to citizens (Meijer &Bekkers, 2015). The OECD defined "E-government" as "the use of information and communication technologies, particularly the Internet, as a tool to achieve better government.". The World Bank (2001) defined "e-government" as “The government that owns or operates information systems to transform relationships with citizens, the private sector, and/or other government agencies to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency”. The goal of e-government is not just to automate the old platform to an electronic one and transform traditional information into bits and bytes to make it accessible online on websites or government official computers. However, E-

government includes fundamental changes, These changes could be made in organizational structures, procedures, and/or cultures of public sector organizations rather than simple improvement in performance (Pollitt &Bouckaert, 2017).to succeed in implementing e-government, Osborne and Gaebler (1992) stated that Governments should focus on prevention rather than treatment, shift away from hierarchy and toward teamwork and participation, empower citizens rather than serve them, and be customer-focused and mission-oriented.

Governments around the world are struggling to reform, mostly due to the necessity to modernize management systems and administrative practices (Tapscott, 1996); (Dardha & Ndou, 2004).

Today, to improve processes and integration, E-government also calls for further thinking about the ways it carries out its functions. In other terms, e-government promotes and supports good governance Fenwick et al., 2019).

Good governance is defined as the effective use of economic, political, and administrative power to manage a country's affairs at all levels. As a consequence, the goals of e-governance are the same as those of good governance, which lead to facilitating the fair and effective provision of services, assisting economic development, and advancing democratic expression, human dignity, and autonomy. "Good governance should be SMART, i.e., Simple, Moral, Accountable, Responsive, and Transparent, which is currently essential in countries all over the world(Fenwick et al., 2019).

2.4 E-government Models

A business model, according to Teece (2018) "describes an architecture and business process utilized by a corporation to create and provide value to customers, as well as the

methods employed to receive a share of that value. Due to the evolutionary character of e-government, its growth model involves several stages or phases. The researchers have developed numerous models with wide differences in structures and their advantages and disadvantages. The Gartner Group, the World Bank, the United Nations, and individuals (Hiller and Belanger (2001); Layne and Lee(2001) Moon(2002)) Create various models that have similarities and variations. Most studies agree on four stages: web presence sometimes referred to as e-Government 1.0 in which the initial applications of World Wide Web technology in the public sector replace paper transactions, the Government websites frequently only offer very basic and limited information, such as an agency's mission and goals, contact information, office hours, and official documents. this phase extended from the late 1990s to the early 2000s.

The discussion switched to the second phase of e-Government 2.0, often known as "open" government, in the second half of the 2000s. This initiative attempts to provide a platform that is open source where the government, citizens, and innovative firms can engage. This contains elementary search engines, an email system, and the availability of official form downloads. In the literature on ICT-enabled innovations in the public sector, e-Government 3.0—the "smart" or "intelligent" government—has been studied more recently, starting around the middle of the 2010s. The Internet of Things (IoT), blockchain, administrative and business process management, open and big data, and IoT innovations power this administration(Mathieu & Aubrecht, 2018). E-government 3.0 was expected to not only function well and be approachable, but also to consider better methods to make decisions by utilizing data and artificial intelligence. (Barcevičius et al., 2019). Finally. The fourth phase is transformation, or e-Government 4.0: a modernized and citizen-driven government that adjusts to the needs and

expectations of its constituents as well as those of businesses, non-profits, and other stakeholders. Additionally, it creates connections and interactions that are simple to access, customized, and interactive (Barcevičius et al., 2019). Figure 2 e-government' model:

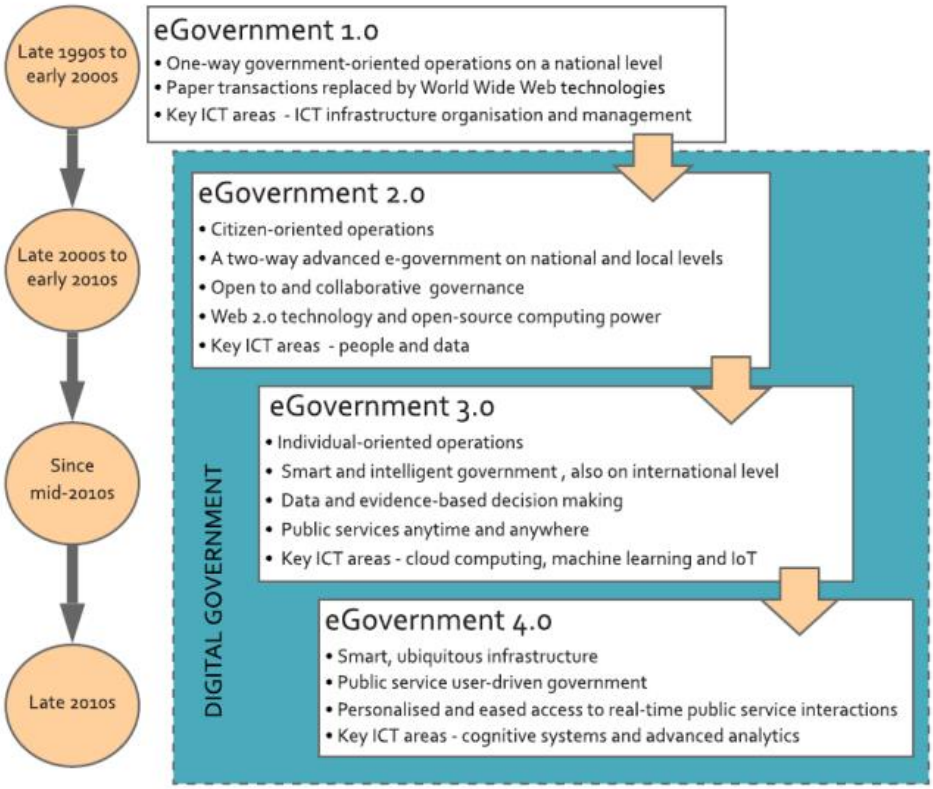

Figure 2: E-government Model (Barcevičius et al., 2019).

2.5 Digital Transformation (DX)

Primarily, this study targets a public organization which is the PLA as a case study, therefore the e-government terms will be used here as one of the DX efforts applied in the government sector. The e-government aims to transform the services into digital ones in public organizations, taking into account whole changes accompanying this process in several aspects, such as organizational structure, cultures, technologies, procedures, and legislation. etc.

It is important in this regard to mention the differences between digitization, digitalization, and digital transformation which are used interchangeably in most studies. for example, Johannes Vrana (2021) defines Digitization as the core of the third revolution. It is all about converting analog things into series of 0s & 1s digits, making the fundamental element universal(Vrana & Singh, 2021). Digitization translates almost every method into capture of text, signal, image, video, or volumetric data in digital form; workflow, analysis, and reporting in digitalized manner; and leveraging the outcomes as digital feedback loops to optimize life cycle cost or product design in the spirit of digital transformation. ((Vrana & Singh, 2021)) while digitalization marks the way to the fourth revolution with means to process the 0s & 1s into meaningful value for convenient consumption(Vrana & Singh, 2021). Digitalization improves specific processes.(Machekhina, 2017) defines digitalization as the transformation of all information types (text, sound, visuals, video, and other data from various sources) into digital language. Digital transformation which is the main topic for this study will be discussed and defined clearly in the following sections.

The main purpose of this study is to address the readiness of the PLA towards the DX initiative. These initiatives promote private and public sectors to continuously innovate non-linearly to achieve and maintain strategic competitive goals (Ndou V, 2004). However, public organizations have begun to understand ICT's potential value as a way to increase the accessibility, quality, responsiveness, and public infrastructure of the services offered to its citizens(Pal et al., 2020). Additionally, organizations are always changing to adapt to the changing organizational environment, the digital divide, customer demand, and the global tendency toward e-services(Gill et al., 2014).

Going digital this is a new initiative that has been launched by The Organization for Economic Cooperation and Development (OECD) in 2017, it points to “Making the Change Effective for Development and Well-Being." Its objective is to assist policymakers in creating policy environments and better understanding of DX that is taking place to enable their economies and societies to prosper in an increasingly digital and data-driven world" (OECD, 2018).

The extant literature has improved our comprehension of particular DX concept, however, numerous definitions for DX were provided by government agencies, academicians, and business experts. DX refers to changes based on digital technologies that have a substantial effect on several industries, including those in the healthcare, telecommunication, automotive, banking, public services, and industrial sectors (Vial, 2021).

As a result, important innovations like Web 2.0, apps, smartphones, and laptops emerged, creating a substantial opportunity for economic growth. Recently, industry in the European Union accounted for nearly 17% of the GDP, affecting 32 million employment opportunities (Qin et al. 2016). (Udovita, 2020) defined DX as the rapid developments of digital connectivity as well as communication and information technologies, the disruptive innovation and integration of digital tools like cloud services, social media, mobile apps, and business analytics, or the technologies that we call SMACIT (social, mobile, analytics, cloud, and Internet of things, or "IoT".

In order to deep understanding of the definition of DX, Deloitte (2018), Schwertner (2017), OECD (2018), the World Bank (2016), and UNCTAD (2017) defined DX from different aspects. However, the common definition of DX from their perspectives is " the application of a variety of dissemination technologies, primarily from the ICT

sector, data as well as their interconnection, that are becoming more commonplace in mechanical systems, communication, infrastructure, and the built environment, and are therefore becoming more significant in social and political life as well as in research, manufacturing, services, transit, and agriculture."

Regarding the literature review and through numerous studies that address this argued phenomenon, the researcher gets a comprehensive understanding of the DX as follows: DX is maximizing leveraging of ICT technology through systematic planning and a clear leadership vision that prioritizes customer needs, to build open, agile, innovative, accessible 'digital government' model which aims to improve digital communication and high-quality digital public services.

Figure 3 demonstrates how governments progress over time since technologies play the main role in the transformation process from analog to digital government.

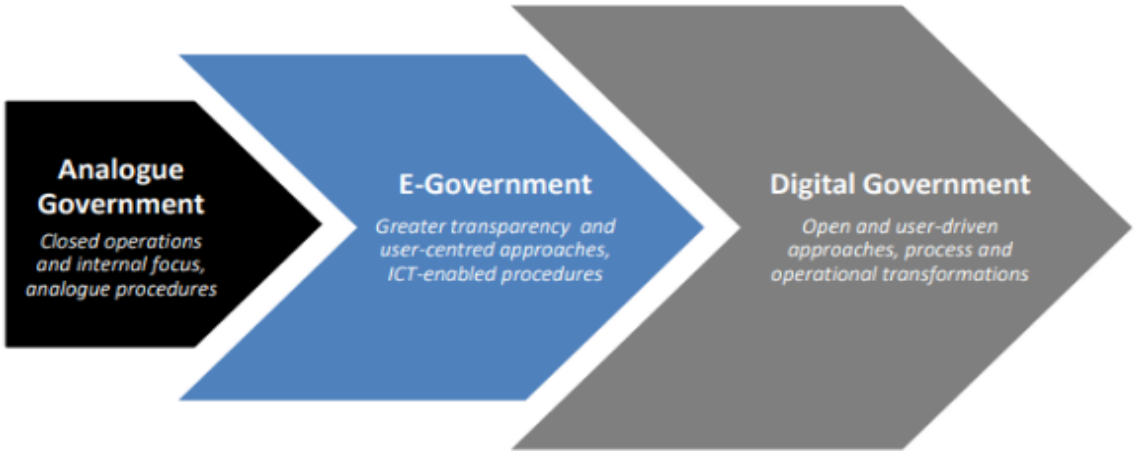

Figure 3: E-government progress regarding new technology. Recommendation on Digital Government Strategies, (OECD 2014).

2.5.1 DX Drivers:

The DX drivers as attributes that influence and enable the DX process to take place have been identified clearly in the existing literature review. For example, Osmundsen

et al., (2018) define drivers as internal or external triggers that motivate companies to adopt DX initiatives. triggers such as Changing customer behaviors, emerging technologies, a shifting competitive environment, adjustments to industry regulations, etc(Morakanyane et al., 2017). These triggers encourage the organization to adopt emergent technology that ensures survival and competence in the changing environments. Based on Morakanyane et al.'s (2020) identification of the drivers of successful DX through addressing many exemplar case studies, these studies conclude the main drivers as follows:

1. **Leadership of the Digital Agenda:** A transparent and agile digital society has greatly benefited from political and administrative leadership's obvious prioritization of digital transformation.
2. **Public Administration Reform & Culture:** Building a digital government would require making large expenditures in administrative, technological, and human capital. Therefore, the government must concentrate on hiring and training people with digital skills by fostering an innovative and creative culture throughout the administration, as well as reorienting the back-office administrative tasks to be more suitable for delivering e-services.
3. **Digital Infrastructure & Government Business Continuity (Technology, Data & Cyber Security):** The government must concentrate on other top priorities, including business continuity management and robust cyber security of shared digital infrastructure across public administration and operations. Leading digital governments can accomplish their objectives by using cloud computing as a key strategic tool. Governments must invest in a robust cybersecurity system in addition to developing specific protocols and scenarios to ensure security and recovery from

any risks from undefined cyber threats, disasters, and pandemics so that their digital beneficiaries can trust their information and protect their privacy.

4. **Digital Legislation & Regulation**: A good legal and regulatory framework with new laws for data privacy, consumer protection, digital signatures, digital identity, cyber security mitigation, etc. is required for a digital government.
5. **Digital Public (User-Centric Design & Digital Ecosystem):** The national digital strategy must adhere to the "user-centric design" approach since the government must meet the needs of the citizen, regardless of their class, gender, race, or location. Concentrating on the requirements of citizens is the first step in building an open and transparent digital government. For instance, encouraging open involvement from the public will involve developing a system to take citizen feedback into account for any e-services.

2.5.2 DX Enablers

The organizations currently face huge challenges including integrating and utilizing new emerging technologies. (Hess et al., 2016). However, several identified success factors enable an organization to embrace digital transformation including the following:

1- **Supportive and agile organizational culture**: A supportive organizational culture must be implemented for IT and joint business efforts to succeed. (Haffke et al., 2017).

2- **Develop a digital business strategy**: By emphasizing leadership digital skills, agile and scalable digital operations, digital customers, adopting good governance practices, and emerging digital innovations, it will support an organization's change and achieve its intended goals. (Leischnig et al., 2017).

3- **The organization's capacity for embracing digital initiatives and making decisions under uncertainty:** Experimenting with novel, quickly evolving technologies frequently needs risk-taking and making choices in the face of uncertainty.

4- **Leverage knowledge**: In the digital transformation process, internal knowledge is crucial. Internally focused digital transformation relies on assisting staff members to become their digital transformers by employing these tools to be innovative in their work. (Mueller and Renken, 2017).

5- **Engage managers and employees**: Leaders must promote innovation, openness, the embrace of technology, entrepreneurship, and a startup way of working (Mueller and Renken, 2017; Petrikina et al., 2017).

6- **New business models**: government agencies must improve business models that take advantage of innovation and automation as effectively as possible.

2.5.3 DX Opportunities

E-government applications improve the quality of the services by enabling citizens and public sectors to obtain available government information and services around the clock, seven days a week (Ndou V, 2004). According to (Seifert, 2003) the adoption of e-government which works on streamlining and re-organizing operating procedures will lead definitely to lower costs and improve the levels of organizational processes. In addition, (Assogba, 2002)declared that e-government presents many opportunities as follows:

1. Efficiency and accountability in different government processes
2. Improve the Quality of provided services delivered to businesses and citizens.
3. Accountability, transparency, and anti-corruption in all business transactions.

4. Increase the potential of the government agencies.
5. Social value Economic
6. Empowering citizens and motivating them to take part in governance.

2.5.4 Challenges and Barriers to Digital Transformation

The DX challenges are anything that could prevent or hinder the effective implementation of DX projects. Any organization's management must strike a balance between the shift in technology and the internal organizational and human capital if it is to effectively guide the organization through a significant transformation. One of the biggest obstacles large organizations encounter on their path to transformation is the organizational obstacles to DX. In their study, Vogelsang and colleagues (2019) delineated the impediments associated with Digital Transformation (DX) as follows:

1- **Technological Factors:** According to Barceviius et al. (2019), the lack of suitable infrastructure continues to be the main challenge to the evolution of e-government, which is why the public sector is still plagued by an aging and outdated IT infrastructure. For example, the big data generated from different sources will not be handled by traditional database systems due to aging internal and external infrastructure, interdependency, and system integration, security dimension, and privacy, among other factors(Al-Omari, 2006).

Regarding the interoperability issue, which describes how machine learning algorithms can evaluate and analyze combined various public databases to provide richer insights for better service delivery or more knowledgeable policy-making (Oztemel & Gursev, 2020). According to a recent World Bank study, a lack of interoperability can result in network disruptions, poor data exchange, and suboptimal performance (World Bank. (2017). Access to data is another challenge that faces the

implementation of DX initiatives. for generating their potential benefits There is a crucial prerequisite because the more publicly accessible data of governments there are, the more potential there is for Big Data analysis to advance the development of new policies. (Hardy, K. & Maurushat, A., 2017). The common data challenges include a lack of data merging, inadequate database size, and a lack of data standards. (i.e., how and what data is collected, and what format it is stored in) (Kusmiarto et al., 2021).

2- **Ethical Factors**: Citizens still lack confidence when using government digital applications which is a critical challenge to address by the governments to successfully implement new technologies that are supported by citizens' confidence and trust (Barcevičius et al., 2019).

3- **Social and Cultural Factors**: Individual data production is rising exponentially, and real-time data collection using new technologies is becoming more and more feasible. On the one hand, this serves to emphasize the importance of maintaining individual data privacy. On the other hand, this highlights how crucial it is to protect people's personal information (Barceviius et al., 2019). However, the advantages of e-government would be immediately apparent if people could use its services. Therefore, cultural differences, which determine the social and behavioral factors, explain the low level of adoption of e-government services across nations. The scholars identified these factors such as perceived value, switching costs, sunk costs, the opinions of coworkers, loss aversion, and uncertainty.(Barcevičiuset al., 2019).

4- **Economic and financial factors**: Martin, C. (2014) discovered that the Open Government Data (OGD) community views the mobilization of financial resources as a significant challenge. Additionally, in his analysis of a police work innovation built

on ICT, Meijer, A. (2015) argues that financial issues become a barrier to innovation as early as the idea generation and idea selection stages: many ideas for public sector improvement are being developed, but only a small, developed idea can be implemented.

5- **Organizational factors**: Many organizational factors prevent a successful digital transformation, and the following are the major difficulties:

- **Lack of Strategy:** An extensive global poll of government officials has revealed that the main obstacle preventing early-stage organizations from utilizing digital trends to their fullest potential is targeted at a fundamental digital transformation (Eggers, W. D. & Bellman, J. 2015). strategy plans for the adoption and development of emergent technologies projects, resource allocation, their alignment with organizational goals, and the diversity of the users and organizations involved also play a significant role(Yamamoto, 2020).
- **Issues at a Management Level**, General administrators require a wide range of abilities to participate in e-government decision-making. Managers must be able to coordinate internal and external personnel and resources to expand the organization's goals with new IT capabilities and combine the ICT strategy with its larger goals. It is crucial to have a thorough understanding of information management and the information society in addition to technical knowledge(Wiseman, M. J., 2018). Change management is required in this situation to deal with resistance and new culture, impose mistakes, organizational resistance to data sharing, and support innovations(Bican & Brem, 2020).

6- **Digital knowledge of Government Employees** has significant effects on the diffusion and adoption of e-government (Al-Busaidy, M., & Weerakkody, V.

2009). that focuses on IT knowledge as information and communication technologies which are more and more integrated into production processes. In addition to technical knowledge, it is essential to have acceptance of new technology and acquire new skills and technical knowledge. It takes technical expertise and capacity to minimize the drawbacks of using cutting-edge technologies and massive quantities of data for robust data management. People are still essential for organizing and managing data (Barcevičius et al., 2019).

7- **Legal Factors**: The nature of the governance structure, particularly the legal system, influences how e-Government projects are carried out and the outcomes they produce (Misuraca, G., &Viscusi, G., 2014). Governments face additional obstacles due to the absence of legislative frameworks that are compatible with emerging technologies, including new privacy and regulatory concerns. Concerns about data privacy, security, and misuse, as well as about violations of and failures to protect the accuracy and privacy of personal data, are serious worries that could impede the public sector's digital transition(Al-Omari, 2006).

2.6 Innovations in DX

DX process requires innovation in all areas: internal process, citizen service models, governance, and policy. This understanding of digital government aligns with the OECD's e-government definition which refers to the integration of digital technologies into the modernization strategy of the government to produce public value. Bessant et al, 2010; EY, 2017; Bertot et al, 2016; de Vries et al, 2016; Misuraca & Viscusi, 2014 defined innovation as the development of new public goods or services or the enhancement of already established ones.

Digital technologies have made it possible for governments to innovate by increasing the effectiveness and quality of internal and exterior processes. the development of novel organizational structures, the adoption of novel management approaches, and novel working procedures to substantially reduce costs or produce a notable increase in productivity. (Walker, 2014; Damanpour, and Schneider, 2009; Bessant et al, 2010; EY, 2017; Bertot et al, 2016; de Vries et al, 2016).

Application of new, emerging technologies is simply the first step; other aspects, their potential combinations, and their distinctive qualities should also be taken into consideration. Most usually, a combination of several technologies and advances leads to a complete transformation. Governments can now interact with their constituents to get their feedback on the services provided and develop solutions that best suit their needs thanks to the growing availability of cheap personal technology and fresh apps.

The Emerging Technologies Supporting DX

The emerging technologies form a great opportunity for the governments in the DX process supporting the innovation process, improved and efficiency of internal and external processes. Emerging including the following:

1- **Artificial Intelligence:** Artificial intelligence (AI) is an all-encompassing word that describes any machine or algorithm that can observe its surroundings, learn from them, and then act intelligently in response to what it has discovered and experienced. Although the term "artificial intelligence" has been around since the 1950s, interest in it has increased over the past ten years due to the unprecedented and continually expanding amounts of data that are being gathered every day through the Internet, platform economy, telecommunications, digital photos, social media, and Internet of Things (IoT). Although the public sector has always been a data-intensive industry, these advancements created new opportunities for gathering

and analyzing all types of data as a key factor leading the transformation of the government into an "intelligent government" (Halaweh, M. (2018); Artificial Intelligence Government (Gov. 3.0)). Although there are more instances of use and discussions about the advantages and risks of implementing AI in the public sphere, there is little empirical data to support these claims. There isn't much concrete proof of the effects yet. Given that process automation and predictive analytics are still in their infancy in the public sector's use of AI, this is not unexpected.(Van Dyk & Van Belle, 2019) .

2- **Internet of Things (IoT):** The Internet of Things (IoT), according to ALE International (2018), is the networking of physical objects employing actuators, embedded sensors, and other devices that gather and distribute data on real-time network activities. IoT technologies are being used by governments as a potent method of data collection and use, even though this is not a new trend. Examples include transportation, energy, smart cities, and defense. (Chatfield, A. T., & Reddick, C. G. (2018).

According to some studies, IoT applications in the public sector may result in increased service flexibility, efficiency, and effectiveness as well as citizen empowerment, cost savings, increased government transparency, better planning and forecasting, more effective regulation enforcement, and improved health and safety measures (Brous, P., & Janssen, M. (2015). Although more recent attempts have been made to address the IoT issue, this argument states that there is a "lack of theory, technology architecture, and standards that integrate the real physical world and the virtual world in a unified framework." This is especially true in the government context (Wirtz, B. W., Weyerer, J. C., &Schichtel, F. T. (2018).

3- **Open Government Data and Application Programming Interfaces:** Open Government Data (OGD) is described by the OECD as a "philosophy" and a "set of policies" that promote transparency, accountability, and the creation of value by making public data available to everybody(Ubaldi, n.d.2013) (*The OECD Principles of Corporate Governance **, 2004) Governments can encourage the creation of new businesses and cutting-edge citizen-centric services by making the vast amounts of data and information gathered by public organizations available and encouraging their use. OGD, in support of the 2030 Agenda for Sustainable Development, is a key enabler of transparent, accountable, and effective public administration agencies, according to the UN (Ubaldi, n.d.2013).

The opening of data typically necessitates interoperability solutions, information exchange for (big) data, and processing infrastructure and capabilities. The more conventional methods of data entry and storage are increasingly being replaced by more advanced techniques. For instance, governments are increasingly utilizing cloud computing to store and process data more effectively(Attaran & Woods, 2019).). Developers can immediately access data catalogs and their contents through this "low-level" entry point, and it also enables them to update data using external systems (T. Herzog) (2014). Developers from different groups can access and use data to create apps, widgets, websites, and other tools based on information and services provided by the government more easily thanks to APIs (Paul, J. 2016).

4- **Cloud Technology:** The US National Institute of Standards and Technology defines the cloud as "a model for enabling convenient on-demand network access to a shared pool of configurable computing resources" (such as networks, servers, storage, applications, and services) (Mell and Grance, 2009, p.1). The cloud is a virtualized

and distributed environment that enables an enterprise (a cloud service consumer) to manage many IT capabilities without having any direct contact with the physical IT environment(Shukur et al., 2020). These capabilities include development, deployment, support, data storage, processing, infrastructure, and social media.

5- Organizations can host their IT components on the internet or an intranet using the cloud service options it offers (Zhang et al. 2010; Gill et al. 2011).

6- **Citizen e-IDs:** A safe environment that enables citizens to access these essential resources or services is provided by a coordinated set of procedures and technology called citizen electronic identification (e-ID), which is administered by governments. Governments should demand online identity verification and authentication to provide residents with unified and seamless access to resources and services, in-person verification techniques are becoming obsolete (Dewachi, 2017).

Generally, Public organizations often require the practical ability to iteratively create and administer the new technologically enabled adaptive business architecture. Agile or adaptive enterprise architecture focuses on the enterprise's fitness, improvement, transformation, and innovation. It is responsive (scans, senses, and appropriately responds to expected and unexpected changes), flexible (adapts to expected or unexpected changes at any time), speedy (accommodates expected or unexpected changes quickly), lean (focuses on reducing waste and cost without compromising quality), and learning (focuses on enterprise fitness, improvement, transformation, and innovation) (Qumer and Henderson-Sellers, 2008).

2.7 Digital Transformation Readiness

The idea of evaluating a new technology's preparedness is not novel; it has existed throughout history. In the (1970s), for instance, NASA developed the technology

readiness level (TRL) technique as a way of assessing the technological readiness level of a spacecraft design. The United States Air Force subsequently adopted and used this methodology, and it gave rise to numerous new models and complementary methodologies (Tomaschek et al., 2016).

Digital Transformation Readiness is " an evaluation of the countries' quality of ICT infrastructure and their ability for people, corporations, and governments to benefit from ICT " (Pal et al., 2020).

Usually, the term ICT involves any communication device, smartphone, computer, network hardware and software, satellite systems, in addition to the various applications and services associated with these components, like videoconferencing and eLearning systems. ICTs are widely seen as a powerful force for change in all economies and societies (Rouse, 2005). The development of new information and communication technologies (ICTs) accelerates the world's transition toward a global economy(Kowal & Paliwoda-Pękosz, 2017). The way societies communicate, conduct business, compete globally, and set their own national economic and human development goals is being revolutionized by ICTs. The basic technological framework of an e-government portal is referred to as ICT architecture (Maheshwari et al., 2009). Stability and scalability in ICT design are essential for the effective implementation of an e-government portal. A government organization's portal must be ready and able to handle increased traffic, handle digital authorization, handle various back-office requirements, accommodate varying levels of technology, and provide access to all government back-end services through delivery channels (Accenture, 2004).

Even though ICT is typically considered as an "enabler," it should also be seen as a responsibility and a threat in and of itself. Businesses run the danger of experiencing

severe competitive disadvantages if they fail to recognize the potential value and applications of ICT. However, certain e-government programs have also been effective in developing nations like Brazil, India, Chile, and others (Dardha & Ndou, 2004b). These nations' experiences demonstrate that developing-nation governments can exploit and appropriate the benefits of ICT, but the success of e-government needs the accommodation of several specific criteria, requirements, and constraints (Ndou V, 2004).

2.7.1 Key Dimensions of DX Readiness

The literature review shows numerous theoretical frameworks and models of technology acquisition and adoption are given in detail, along with models pertinent to the Palestinian context. Part of these models investigated DX readiness at both organizational and citizen levels, in addition to attempts to adopt evolving technology. These models included but weren't limited to, Digital governance Readiness Assessment (DGRA) in (2020), the 1960-starting Theory of Diffusion of Innovations (DIT) (Rogers, 1995), the 1975-starting Theory of Reasonable Action (TRA), the 1996-starting Technology Acceptance Model (TAM), the 2000-starting Technology Acceptance Model (TAM2), the 2003-starting Unified Theory of Acceptance and Use of Technology (UTAUT), and the Venkatesh, Morris, Davis, and Davis-starting Technology.

According to studies by (Davis, Bagozzi, &Warshaw, 1989; Adams, Nelson, & Todd, 1992; Venkatesh& Davis, 2000; Venkatesh& Morris, 2000), the technology acceptance model (TAM), which is the most widely used of IT adoption and use, is a highly effective predictor of IT adoption and usage at the citizen level. According to the study, perceived usefulness, or how much a person feels using IT would improve his or her

work performance, and perceived ease of use, or how much a person believes using IT will be simple (Venkatesh & Bala, 2008), are the two perceptions that have an impact on people's behavioral intentions to use IT. Another study enhanced TAM by including new dimensions as predictors of TAM variables for example, (Karahanna & Straub 1999); (Venkatesh & Davis 2000); (Koufaris 2002).

However, these studies attempt to identify the most relevant constructs (that are called dimensions) from our detailed literature review related to technology adoption to propose a proper model as a foundation to measure the level of readiness of PLA beneficiaries towards the Dx trend. These dimensions focus on the factors that motivate the beneficiaries to use the PLA website, in addition to the capabilities that enable them to use it. These factors with their capabilities together form the level of their readiness towards the DX implementation at the PLA. Table 1 contains the proposed.

Readiness dimensions of the DX at the beneficiaries' level:

Table 2.1: Beneficiaries Readiness Dimensions for DX in TAM Model.

No	Information Category	Conceptual Definition	References
1.	Personal and Demographic Information	Included Age group and qualification. Specialty, and if the users have ever benefited from the services provided by the PLA.	
2.	Availability of Resources (AoR)	The accessibility and flexibility to utilize ICT with competitive features like cost, speed, and availability, as well as phones, computers, and the internet.	Murru (2003), authors self-developed
3.	Computer-self efficacy (CSE)	Considering prior knowledge, experience, and skill that users believe are necessary for using, participating in, and transacting in an EG system when determining a user's technological capacity	Wang (2002), AGIMO (2003), Tung and Rieck (2005), Anthopoulos et al. (2007), Kumar et al. (2007), authors self-developed
4.	Perceived ability to use (PAU)	The extent to which an EG user feels comfortable and competent using an EG system that fits their beliefs, social needs, and general attitudes from a technological, organizational, and psychological perspective.	Wang (2002), AGIMO (2003), Murru (2003), Wolfinbarger and Gilly (2003), Carter and Bélanger (2005), Parasuraman et al. (2005), Wangpipatwong et al. (2005), Collier and Bienstock (2006), Kumar et al. (2007), Shareef et al. (2007),
5.	Perceived information quality (PIQ)	The website offers customers the opportunity to obtain current information about any of their intended objectives by rating the information given in terms of quality, completeness, organization, understandability, and timeliness.	Murru (2003),

6.	Perceived functional benefit (PFB)	The degree of users' attitude-based trust in EG's dependability, credibility, safety, and honesty from a technological, organizational, social, and political perspective, as well as from the responsive, effective, efficient, and sympathetic customer service.	Loiacono et al. (2002), Accenture (2003), AGIMO (2003), Murru (2003), Chen and Thurmaier (2005), Parasuraman et al. (2005), Tung and Rieck (2005), Wangpipatwong et al. (2005), Collier and Bienstock (2006), Fassnacht and Koese (2006), au
7.	Perceived legal framework (PLF)	the extent to which DX-related government actions and new procedures have been officially regulated. DX implementation, organizational change, reform of leadership and administration, and the introduction of a new service channel all require legal authorization.	(A. Alghamdi et al., 2011)
8.	Perceived privacy (PP)	The extent to which EG users believe it is secure to share personal and financial information during interactions and purchases with websites, and the extent to which users have confidence that EG systems don't share or misuse their information.	Yoo and Donthu (2001), Devaraj et al. (2002), Janda et al. (2002), AGIMO (2003), Murru (2003), Wolfinbarger and Gilly (2003), Chen and Thurmaier (2005), Parasuraman et al. (2005), Wangpipatwong et al. (2005), Collier and Bienstock (2006), Anthopoulos et al. (2007), Kumar et al. (2007), Shareef et al. (2007), a

In the following section, the researcher applies the Digital Governance Assessment Framework (DGRA) that was developed by The World Bank Group (2020) and adapted to the land service sector.

DGRA consists of nine core dimensions including (User-Centered Design, Leadership, and Governance, Public Administration Reforms and Change Management, (Capabilities, culture, and skills), (Data Infrastructure, Strategies, and Governance), (Cybersecurity, Privacy, and Resilience), legislations and Regulations, and Digital Ecosystem). These factors serve as the fundamental framework for examining interviewee views on the level of readiness of the PLA as a public sector for DX. Table 2.2 summarizes the dimensions of readiness for DX in the public sector.

Table 2.2: PLA Readiness Dimensions for DX in DGRA Model.
Based on (Kusmiarto, K., Aditya, T., Djurdjani, D., & Subaryono, S. 2021).

No	Factors	Conceptual Definition
1	Leadership and Governance	This concept examines organizational and governance structures, strategies, and roadmaps for the digital transition. The likelihood of an effective digital transformation is estimated by looking at the leadership and governance aspects.
2	User-Centered Design	This concept looks at user input and involvement in the planning and creation of government digital or e-services.
3	Public Administration Reforms and Change Management	The public administration changes for digital transformations are examined in this construct. The success of the program depends on this, which is frequently the most neglected element of digital transformation.
4	Capabilities, Culture, and Skills	This construct examines the readiness of the government's human resources for both internal and external (contractors) digital government practitioners and business specialists.
5	Technology Infrastructure	This framework examines the common technology infrastructure standards, designs, and implementations

		created or intended for the digital government, whether by the government acting on its own or in collaboration with the private sector.
6	Data Infrastructure, Strategies, and Governance	This construct examines government data, including its availability, organization, and currency as well as related exchange standards, procedures, and policies.
7	Cyber Security, Privacy, and Resilience	To protect the digital government's cyber security, privacy, authenticity, integrity, and resilience against any unknown risks, threats, catastrophes, and pandemics, this construct examines security and government business continuity management.
8	Legislation and Regulation	This concept examines enabling laws and regulations that support the digital industry and government.
9	Digital Ecosystem	This concept examines enabling variables that are not related to the government but can support the implementation of the digital government agenda. Kusmiarto, K., Aditya, T., Djurdjani, D., & Subaryono, S. (2021).

These dimensions (in Tables 2.1 and 2.2) will be used in questionnaires and interview questions to investigate the level of readiness for DX in PLA.

2.8 DX Strategy Development

Companies, businesses, organizations, and groups can drastically alter and enhance their business models thanks to new digital technologies (Ziyadin et al., 2019). This typically entails modifications to essential business processes that influence products, procedures, organizational structures, and management theories. Organizations must develop and implement a clear digital transformation strategy that embraces the implications of digital transformation and enhances operational performance if they are to keep up with the new digital reality and navigate the challenges of digital transformation. (Matt et al., 2015)(Hess et al., 2016). The formulation and implementation of a digital

transformation strategy (DXS) has become a key concern for many public organizations in developing countries including Palestine. In Palestine, E-government initiatives that are currently launched at the ministry level require deep analysis and actual assessment of DX readiness to develop an improved DX strategy, which advances government productivity. DX strategy is crucial for the adoption of e-government, according to certain studies on e-readiness evaluation methods (APEC, 2000, APEC, 2008, Bakry, 2004), while other studies reveal that DX strategy has little to no impact on e-government readiness (Azab et al., 2009).

However, this study emphasizes the importance of DX strategy for effective DX initiatives. That is in line with the ICT-related Millennium Development Goals (MDGs), which take into account e-readiness factors such as DX strategy (World Bank, 2005).

Several terms are used to present and define digital strategies and their concerns, such as Digital Transformation Strategies (Matt et al., 2015), Strategic Information Systems Planning (Kamariotou and Kitsios, 2019), Synergy for Digital Transformation (ZinderandYunatova, 2016), Digital Transformation by SME entrepreneurs (Li et al., 2017), Transformation of Business Models (Schallmo et al., 2017).

A digital strategy acts as a point of contact for the coordination of the different digitization initiatives and provides a summary of the procedures, goals, guidelines, and control structures associated with digital transformation (Schallmo et al., 2018). As a result, entire company models may be changed or replaced (Downes and Nunes 2013). Additionally, A digital transformation plan is a road map that aids organizations in managing changes brought on by the integration of digital technologies as well as adjustments to their operations following a transition. (Matt et al., 2015). Since digital

transformation methods go beyond the process paradigm and affect all an organization's goods, services, and business models, they also change them. Many studies presented definitions for DX strategy, for example, Bharadwaj et al.(2013) defined digital strategy as" It refers to the strategy of the organization that was created and implemented by employing digital resources to provide differential values".

Strategies for digital transformation share some elements. These elements can be divided into four categories: the use of technology, changes in the way value is created, structural modifications, and financial issues. A single shared Digital Transformation Framework (DTF) that incorporates all four transformational dimensions and their interdependencies can be created, which will aid organizations in evaluating their present capabilities and developing a digital transformation strategy (Matt, C. (2015)). In addition, Kane et al. (2017) noticed that to satisfy the demands of several stakeholders, firms must align their strategy, people, culture, technology, and structure.

1- **Technologies Dimension:** The development of digital technologies is what is driving the digital revolution. Therefore, an organization's use of technology reflects both its mindset toward emerging technologies and its capacity to take advantage of them (Kitsios & Mitroulis, 2019). To manage this component successfully, managers must evaluate the performance of their IT teams as well as how proactive and creative they are in their use of developing technologies.

2- **Changes in Value Creation Dimension:** By influencing services, business processes, and business models, Digital technology exploitation and integration frequently have a substantial impact on most of any company and even go outside their borders. Digitization has a wide range of potential advantages, including increased productivity, novel value-creation techniques, and novel consumer

engagement strategies (Ismail et al., n.d.). The digitization of public services may call for a variety of resources, which could lead to changes in business models for firms and an expansion and enrichment of the existing service portfolio.

3- **Structural Changes Dimension:** It is frequently necessary to make structural changes to give new activities a solid foundation. particularly regarding where new digital activities should be placed within corporate structures (Kitsios & Mitroulis, 2019). Additionally, management must determine whether newly enabled digital processes.

4- **Financial Dimension:** Budgetary factors both motivate and hinder the shift. Even if organizations already under financial pressure might not have access to external financing for a transformation, less financial pressure on the core company may make businesses feel less forced to move forward now. As a result, companies should recognize the necessity of digital transitions and promptly and openly evaluate their options. In 2020, Zineb and Bouchaib.

2.8.1 Structure and Contents of DX Strategy

In general, a typical DX strategy comprises fundamental and common elements that are placed in a particular order to demonstrate how several fundamental elements work together. It displays how each element relates to the others. This facilitates planning and makes identifying discrepancies much simpler. In addition, it shapes government priorities and promotes collaboration in the design of government services. this structure improves successful implementation. Figure 4 shows the common structure of the DX strategy.

Figure 4: Structure of the DX Strategy (Zineb & Bouchaib, 2020).

The Strategic Vision:

The e-government initiative will need to get off the ground, and vision and politics are essential. Vision is essential, as will always be the e-government committee's guiding principle, which is typically in charge of planning and leading execution (Heeks, 2006). The goal is significant because it conveys the organization's philosophy. A specific collection of social, political, and economic conditions and requirements underpins an e-government vision (Park, 2008). Based on this vision, the organization is supposed to create a mission statement, which is typically more specific and expressive than the vision.

The Strategic objectives:

Each government developed its e-government initiative with specific goals in mind. These goals are of utmost significance. They defend the substantial resources frequently allocated to e-government projects. What the government is going to accomplish should be fully outlined in the strategic goals. They must not be entirely unconnected or disconnected from one another.

Guiding principles:

The broad themes of e-government initiatives are defined by these principles. These patterns demonstrate the direction that e-government initiatives around the globe are taking. The results reveal the characteristics that can be anticipated from e-governments in the upcoming few years.

Designing a strategic framework requires consideration of prevalent patterns in e-government strategies. They outline the potential restraints. They also give direction and authority over design and execution. For example, guiding principles include User-Oriented, Transparency, Trust, Satisfaction, and User-friendliness.

(Chanias et al., 2018) finds that a digital strategy typically has three phases: formulation of the strategy, implementation of the transformation, and management of the transformation. These stages enable the digital transformation strategy, building elements, and procedures to be continuously improved. (Fig. 5) Presents the digital transformation cycle and phases.

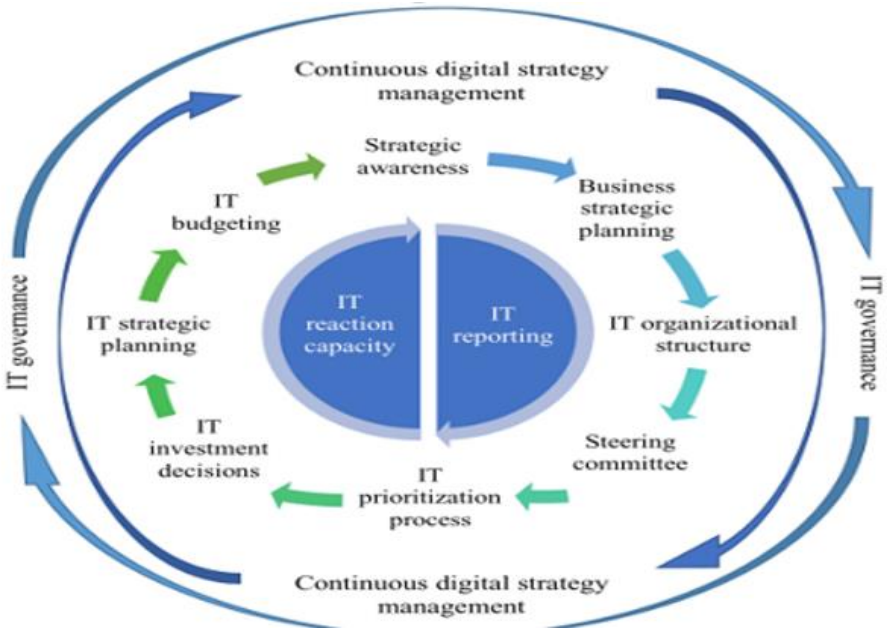

Figure 5: DX Strategy Approach (Chanias et al., 2018).

2.8.2 SWOT Analysis

The management team identifies the internal and external elements affecting the organization's performance. The process is known as an SW OT analysis. Internal company capabilities and beneficial business establishment features are strengths in the SWOT analysis, which are essential for organizations to realize their goals and offer clients high-quality service. (GÜREL, 2017).

Weaknesses are potential internal roadblocks or restrictions that could prevent an organization from succeeding. The internal factors of the business are its strengths and shortcomings. Opportunities are characteristics or elements in a SWOT analysis that can help or support organizations with connections to outside entities. They are external variables that corporations can use to their advantage. (Namugenyi and colleagues, 2019). Threats are detrimental, external forces that may impede or postpone the achievement of attainable goals. Opportunities and threats are therefore viewed as environmental factors (GÜREL, 2017).

2.9 The Palestinian Land Authority (PLA)

Palestinian Government is currently in the primary stage of designing and implementing its electronic government, to make widespread use of ICT to enhance citizen services and foster economic growth (Sideridis, 2014). Most of the existing literature ensures that the transformation process from the traditional way of services provided to e-government needs a radical change in leadership and more investment in new technologies as well as more preparedness and adoption of these emergent technologies. The Palestinian Land Authority as a public organization was established in 2002 by presidential decree number 10, in 2010 A presidential law by decree number 6 was issued and stated in Article 5 the tasks and responsibilities of the PLA and stated in

items e 1,9,10 that the PLA should register and maintain land records in Palestine and create and update the database of the register records and the right holders' rights.

PLA aims to protect ownership of property, give accurate information about property ownership, support the stability of tenancy, and promote the growth of the land market. Having the infrastructure required to maintain land information in place, supported by an appropriate institutional framework and sufficient capacity, is one key to performing these functions. The existence of a consolidated database with details on property ownership and encumbrances is a characteristic of trustworthy systems.

The structure of the PLA consists of seven general administrations including registration, information technology, survey, state property, managerial, financial, and law affairs. In addition to four units which are international relations and projects, public relations and media, complaints, and council of minister units. These components work together to provide services to citizens based on applicable laws and administration frameworks. PLA is responsible for the first registration of immovable property, transfer of the property rights by selling it or transmission by inheritance, as well as state property management. Despite technological huge progress at different levels, unfortunately, the use of technology and technical methods in PLA is still in the premature stage. till now the PLA has provided most of the services in the traditional way, which requires citizen who wants to get any services or information he/she must visit in person one of the nearest offices of the PLA, apply the request in paper form, and most times needs to revisit the office several times to accomplish his/her transaction. Also, the employees in the back offices receive the applications, organize and accumulate them in one paper file, and turn them in to other employees regarding their roles and responsibilities in that work process. When the transactions/files are

finished, they are saved in the paper archive. However, this way causes stacking of the files for a long time, exposure to any potential risks or natural disasters sometimes it might be lost completely, which means the property rights in return cause more disputes between citizens.

The PLA provides services through fourteen offices distributed throughout the country and operates in a decentralized manner, while the PLA has registration and cadaster systems, each of them accomplishes an important part in any transactions conducted by the PLA, the two are not seamlessly integrated and do not cover all the business processes. For example, the new registration transaction needs many phases to be finished. in the first phase, the citizen needs to survey the land by a licensed surveyor, then must get approval from the municipality on the land map. After that, he was required to open a file at PLA in cadaster administration to investigate whether the beginning of this land property returned to an estate or not, if yes, the application at all refused. if not, the technical thing from Cadaster's perspective is investigated then the application is approved if it matches the required terms. Then, it turns to the registration administration. In this phase, all documents that prove property rights are needed besides the approval map. This transaction applies in person to the registration department, then it passes through several processes from auditing to paying the fees, final registration, and the certificate issued for this land. Then due to legislative and regulatory constraints, the PLA must store finished records and transactions in paper form in a physical archive.

In 2015, PLA in coordination with World Bank developed and launched the Computerized Land Registration System (CLRS). Currently, this system is deployed in 14 offices distributed across the west bank beside the headquarters at Ramallah. In

addition, the PLA's IT department runs and manages several systems and software applications to support the various processes within the organization and enhance these services' provision. Some of these departments have computerized and automated their work by the internal developer or through local programming companies. These computerized systems are deployed in some departments such as human resources, geographic information systems (GIS), revenue systems, monitoring and evaluation systems, and documents management systems (DMS). However, most of these computerized systems have deficiencies and don't fulfill the needs of citizens and even the employees who use the systems, for example, the CLRS not cover all services and transactions conducted in the registration system. in addition, there is no integration between these main systems which supposed working together to accomplish the transactions in a fully digital way. Furthermore, these systems don't support security and privacy issues. For example, there is no digital signature for any person who wants to get any digital service through the current PLA portal. PLA portal is a trial website that presents information and services to the citizens. These services include updated and signed maps for registered estates, legal information organizing the PLA's works, mandate, mission and strategic plan, Transaction procedures, and the PLA activities.

Nowadays, the PG supports PLA to provide two electronic services including prepaid and property certificates to the citizens through the information and telecommunication ministry.

Even though DX in land services is expensive and time-consuming, the PLA has to adopt DX initiatives because of their benefits, which include contributing to the achievement of sustainable development goals, influencing the rate of economic growth,

and increasing Gross Domestic Product (GDP) by 1.19% in developed countries and 1.35% in developing countries (Kusmiarto et al., 2021).

Starting is the correct course of action. Digital records will also serve as the basis for a centralized database of lines and encumbrances as well as online registration, which is to PG's orientation to embrace e-government and post essential information online. A comprehensive and effective electronic database for checking encumbrances (liens, mortgages, restrictions, and the like) should be available publicly. Automate many processes and interact electronically with the citizens to ensure transparency and accountability for the provided services, which leads to beneficiaries' satisfaction.

2.10 Previous Studies

Despite the notable literature regarding the readiness for digital transformation and users' adoption of e-government systems in developing and developed countries, comprehensive framework dimensions for assessing the readiness toward DX have not been presented in the literature, especially in developing countries such as Palestine (A. Alghamdi et al., 2011). All these studies addressed this phenomenon from many perspectives and in different contexts. Therefore, it presented various factors for successful adoption, implementation, challenges, and risks that hinder the progression of the DX journey. Recent studies highlight readiness dimensions and success factors for DX in developed countries as exemplar cases (Morakanyane et al., 2020). However, in this study, the researcher investigates the readiness dimensions in Palestine especially at the PLA as a public organization. Organizations' readiness for digital transformation is evaluated in the categories of talent, culture, technology, and organizational structure as one measure of their digital maturity. For instance, Moon (2022) primarily focuses on technological problems as a determinant to assess readiness for DX, such as ICT

architecture and infrastructure, security, authentication, web standards, and portals. Other contributors attempted to create frameworks that would help us comprehend how prepared we are for DX. According to Teo (2005)who has provided many contributions to the successful DX through his study that provides a set of learned lessons from the Singapore e-Government experience. The study concentrated on creating an adaptable and extensible infrastructure, and leadership vision, stressing the importance of facilitating change management and closing the digital gap, growing confidence in e-Government, and having a strong and efficient legal system to deal with cybercrimes. (Abdalla, 2006); (Alshihi, 2005); (Baark and Heeks) (1999, Rahman, 2007) emphasized the dissemination among stakeholders in developing nations, ICT transfer, and cultural and national issues in the creation of e-government. To increase the efficiency of e-government initiatives, the proposed framework for e-government also includes seven ICT readiness assessment dimensions, including e-government organizational ICT strategy, user access, e-government program, ICT architecture, business process, and information systems, ICT infrastructure, and human resource (Stephen et al., 2006). (Ojha, S., &Pandey, I. M. (2017) focused on analyzing and resolving the major issues of risks, mitigation of strategic error for preventing loss of investment in the DX project, and a lack of technical knowledge, allocating funding necessary for growth and innovation, in addition to developing core competencies, managing and sharing project risks, and creating a customized project governance strategy.

To adapt to the transforming environment of digital transformation at public institutions, Sánchez (2020) emphasized the importance of having a clearly defined

strategy as well as the leadership, resources, capabilities, and management decisions necessary.

Beyond the design and implementation of the new system, other investigations dealt with the control of the risks and changes arising in the DX journey, these changes must be supported by regulations according to (Rabaiah, A., &Vandijct, E. (2011). However, (Millard, J. (2017) concentrated on how ICT could significantly increase the efficiency of the public sector through the adoption of private-sector management disciplines that had already demonstrated how to maximize efficiency and efficacy and overcome the potential changes.

On the other hand, to thrive in the digital age, large, established companies must implement new organizational structures and procedures that permit their staff to collaborate, experiment with technology, and provide consumers with integrated goods and services. (Sebastian (2020). Additionally, (Teece, 2010) recommended investigating the relationships between business strategy, innovation management, and economic theory and concentrating on customer needs when developing the e-government model. Philip O'Reilly (2020) identified the success factors for a successful DX journey. These factors include strong digital leadership traits, digital technologies, skills, and capabilities required.

Moreover, Big data despite being in its infancy, has enormous promise for smart governance in the public sector. According to Md Altab Hossin (2018) assisted in the adoption of big data technology by all government agencies in order to decrease corruption, threats, and difficulties while boosting effectiveness, accountability, and openness.

Some studies highlighted other impediments to adoption and successful DX initiatives. For example; Al-Shboul, Rababah, Ghnemat, & Al-Saqqa, (2014) found that budgeting and financial costs, human expertise, social influence, technological issues, lack of awareness, the resistance of public employees, data privacy and security, the legal framework, and telecommunications infrastructure are the main obstacles affecting the implementation of e-Government services. This article also examines the difficulties and barriers that must be overcome for Jordan to properly implement e-government.

In the Palestinian context, there are many dimensions to be addressed to understand the current situation in terms of readiness for successful digital transformation. Some research discussed interoperability among public institutions as a necessary factor for the gradual implementation and success of DX. For example, the study of Jarrah (2011) provided the Palestinian Interoperability Framework 'Zinnar' case, which is an illustration of utilizing ontology in e-government (i.e., data and process governance) to address the issues with semantic and organizational interoperability in Palestine. Moreover, Obaid, (2020) studies focused on the important factors for Successful E-Government Adoption in Palestine,

including personal factors (users‟ gender, location, age, academic level income, salary and computer literacy degree), and technical aspects included (PS, TQS, and ACC). In addition, the trustworthiness aspects consist of (perceived trust (PT) and regulations and policies). Ayyash, M. M., Ahmad, K., & Singh, D. (2013) Researchers who looked into how information systems factors affected the adoption of an e-government initiative in the Palestinian public sector revealed that trust in e-government is positively influenced by information quality, system quality, service quality, perceived usefulness, perceived ease of use, and security privacy. Herzallah, F., &Mukhtar, M. (2015) addressed

internal organizational aspects that influence the adoption of e-government in their study (The effect of internal organizational features on the adoption of e-commerce and its impact on organizational performance among Palestinian small and medium-sized businesses). The internal factors represent technological factors, organizational factors, and information culture factors. This study proved the positive relation between examined factors and e-government. Khalil Ali Madi and Tareq Abu Hjayyer (2020) investigated the Private Palestinian Universities' readiness toward Digital Transformation in Palestine. The study produced several findings, but the most significant ones are as follows: A significant approval rate of 81.52% exists for senior management's support of digital transformation, and a lower percentage of 78.82% exists for the field of strategic directions suitable for digital transformation, while a rate of 77.88% was found for the field of technical infrastructure availability for digital transformation, the administrative environment, and the appropriate financing.

However, despite significant research on DX, its opportunities, threats, and challenges, there may be a lack of DX studies on DX in the Palestinian context, especially in public organizations. In addition, since the main question of this study is: what is the PLA’s readiness towards DX? Therefore, the researcher focused on the studies that search for the dimensions that determine the level of DX readiness at public organizations across the world. Most literature that has been reviewed took part of DX readiness in different contexts and circumstances. Besides that, some of these studies focused on other issues such as the risks that hinder DX progression, the absence of DX strategy, lack of infrastructure, citizen involvement, and so on. All these issues are considered significant to ensure the successful implementation of DX initiatives. However, In the Palestinian context, especially at PUBLIC Organization There is no study address the main research

problem which is the PLA readiness towards DX. since studying this problem is still an open question and needs to be considered and investigated. This study will deeply investigate the current readiness of PLA as a public organization for DX internally and externally from many dimensions including organizational, citizen focus, IT infrastructures, and Palestinian e-Gov. initiatives, legislations and laws, privacy and security, information availability and quality, leadership vision, and strategic planning. in addition, this study will also bridge the gap in knowledge about the extent of public organization readiness toward DX initiatives.

Chapter Three

Research Methodology

3.1 Introduction

This part of the thesis describes the research methodology and procedures that the researcher used to accomplish the study's goals to carry out the empirical digital assessment at PLA. A justification for the researcher's choice of methodology is given after exploring various research methodologies and research design choices. This chapter also discusses the sources of data, the tools for gathering data, and the methods for analyzing data, including statistical and discourse analyses, demographic, and sample analyses. The following chapter then offers quantitative proof supporting the questionnaire's reliability and validity.

In this section, qualitative and quantitative approaches will be used. These approaches are appropriate to investigate the mentioned research problem and achieve its objectives. In particular, the researcher needs to deeply understand and measure the readiness of the PLA and its beneficiaries for digital transformation as a strategic choice. Moreover, it proposes conclusions and recommendations for developing a digital transformation strategy based on the results of analyzed data.

In the following sections, both methodologies quantitative and qualitative will be introduced clearly and respectively.

3.2 Research Design:

3.2.1 The qualitative method: For this study, the qualitative research approach was chosen because the thesis's objective is to understand and characterize an emerging phenomenon in a practical situation (Golafshani, 2003; Ritchie and Lewis, 2014). The primary goal of qualitative research, as noted by Strauss and Corbin (2012), is to

understand the world from the perspective of participants to make conclusions that contribute to the expansion of empirical knowledge. Therefore, a qualitative approach was chosen to understand digital transformation as a nascent phenomenon at PLA. Moreover, the aim was to describe and measure the current practice concerning digital transformation initiatives to answer the research question and achieve its objectives.

3.3 Research Approach

The PLA is chosen as a case study for this study. Since the case study is the recommended method for examining a current phenomenon in its actual setting and while a topic is still being researched, the case study is preferred (Eisenhardt, 1989; Yin, 2003). Case studies can also use quantitative data, even though qualitative data is typically linked with them (Eisenhardt, 1989). Case studies are also a good method for developing inductive theories (ibid).

3.4 Data Collection Approach

Sufficient data is required and manipulated to indicate the PLA readiness level toward the DX. In total, 20 senior officers from the PLA and MTIT were interviewed as the main source of data. The interviews were conducted using semi-structured interviews. The same person was interviewed more than once to get the needed and appropriate information. Interview questions were different in each interview depending on the interviewee's role and expertise.

In addition to interviews, secondary data was collected from the PLA website, policies, laws, reports, government decisions, and regulations. These various secondary data sources are combined in the research to create validity, which increases reality's correctness. (Gibbert, Winfried, and Wicki, 2008).

3.5 Instrument Development

The Digital Governance Assessment Framework (DGRA) is used in this section. that was developed by The World Bank Group(2020) and adapted to the land service sector in many countries such as Myanmar, Senegal, Lebanon, Vietnam, Kyrgyzstan, Indonesia, and Uzbekistan. In addition, these models are used to measure the readiness of organizations toward DX. Therefore, the researcher adopted them with some adjustments and modifications to suit the local Palestinian context, especially at the PLA as a public organization.

3.6 Quantitative Approach

As it is known, this study aims to investigate the readiness towards DX at PLA from the perspectives of high employees as well as the beneficiaries as a strategic choice. To have a comprehensive view of readiness at PLA from the organization itself and the beneficiaries of its services. This section will complete the investigation circle by investigating the beneficiary's perspectives through an online questionnaire. The quantitative approach is chosen to achieve these objectives. The quantitative data will be collected and then analyzed using SPSS to measure the means and standard deviations of variables and their relations and significance. a set of dimensions were extracted from the analysis of the DGRA and other models such as TAM1 and TAM2. These dimensions include (availability of resources, computer self-efficacy, perceived ability to use, perceived information quality, perceived functional benefit, perceived legal framework, and perceived privacy)

The researcher was able to determine the association between these factors using the quantitative method. According to Amaratunga, Baldry, Sashar, and Newton (2002), quantitative research is crucial to generate statistical context and evidence explaining

the relationship between various factors in a specific research setting. Providing the direction of the relationships between the variables under investigation and contrasting the findings with the theory and body of literature supporting the overall field of study are also crucial.

3.6.1 Population and Samples

The survey was conducted in Ramallah city in 2021 at the beginning of the COVID-19 pandemic since the PLA transformed some of its services into e-services through the PLA portal and website. The PLA's decision to choose Ramallah City as a Pilot to experience the PLA e-services. As usual, the average number of beneficiaries in one month is about (400). To determine the sample size, the researcher used (Olayiwola Usman, n.d.)) simplified formula, see the proportion in Equation (1).

$$N= n/1+n*e^2 \quad (1)$$

For calculating the minimum sample size of the beneficiaries, the population size (n1) was 400 and the acceptable sampling error (e) was 0.1 (10 %), corresponding to a confidence level of 95 % and p = 0.5 (see Equation (2

$$N= 400/1+400*0.1^2 \quad (2)$$

N= 80

The minimum sample size should therefore be **80,** which accounted for 20% of 400 total participants during the period of study.

The researcher got the communication tools including Whatsup and emails of the beneficiaries from the front employees who present the PLA" services personally and directly to them. The questionnaires have been designed using Google Forms. The number of questionnaires distributed and returned back through these tools was 152 in the selected sample.

Table (3.1): The Sample distribution of the research study was collected based on the Demographic Variables (Age, Specialty, Qualification).

Variables	scale	Frequency	Percent
The Age	18-29	35	23.0
	30-39	57	37.5
	40-49	36	23.7
	more than 50	24	15.8
	Total	**152**	**100.0**
The Qualification	Secondary	5	3.3
	Diploma, BA	79	52.0
	Graduate Studies	68	44.7
	Total	**152**	**100.0**
The Specialty	Human Sciences	54	35.5
	Medical sciences	5	3.3
	Technology and engineering sciences	41	27.0
	Other(any other speciality)	52	34.2
	Total	**152**	**100.0**

The Table above points to the specifications of the sample that was chosen to answer the questionnaire. These specifications were chosen based on their effect on the ability to use and benefit from e-services delivered by institutions. The age of respondents was between 18 and 59. That means it includes most citizens who come to the PLA to get the services since the highest average is 37.5 for the age between 30-39. For the qualifications, the highest average for the respondents who have graduate studies as the mean is 44.7, which indicates a positive relation between the ability to use and benefit from the PLA website and the level of qualifications of the respondents. the highest average of the specialty is human science which indicates that the specialty doesn't have

a big effect on the ability to use technology applications. the IT specialty for example has the minimum average which is 27.

3.6.2 Validity and Reliability

The ideas of validity and reliability are measuring standards for a survey, questionnaire, or any other form of measure that could have an impact on the study's credibility. Using content validity and reliability criteria, the researcher evaluated the measurement instrument's reliability and validity**.**

3.6.2.1 Validity

Content Validity means "measure what is intended to be measured" (Field, n.d.) In the IT domain, content validity is the most recommended use since it relates to the extent to which the instrument accurately evaluates or measures the relevant construct.

In this regard, the factors that determine readiness towards DX which are used in this research study, have already been investigated, validated, and adopted in other existing research studies. Moreover, the first draft of the questionnaire was reviewed by Dr. Mohammad Abu Zaid from Beirzeit University and Dr. Rose Othman from Arab American University. They have excellent awareness, knowledge, and expertise in the area of the research topic, then the questionnaire has modified upon their suggestions.

In addition, by using Pearson's correlation between a statement and the average of all data with a dimension to which it belongs, internal validity was investigated and estimated. The analysis also showed that all statements were significantly related to the general construct they were designed to measure as the P-values for all statements were less than 0.05, that showed in Table3.2

3.6.2.2 Reliability

Reliability refers to the stability and consistency of the measuring instrument used over time. Therefore, reliability is the ability of scaled tools to produce similar results when applied at different times (Kimberlin & Winterstein, 2008).

Various methods were used to determine the reliability of the measures used in the experimental research. The most common method that has been used in the previous research is to determine the alpha coefficient. Cronbach's alpha coefficient was originally developed by Cronbach in 1951 and named after the researcher who developed the coefficient, which is generally accepted in the literature. The value of Cronbach's alpha coefficient is ranging from 0 to 1, where when this value approaches 1, it is reported that the internal consistency is high. Cronbach's alpha can be calculated by correlating the score for each scale item to the total score for each observation and then comparing that to the variance for all scores of the individual item. (Kimberlin & Winterstein, 2008).

When applying Cronbach's alpha measurement on the instruments to evaluate the reliability of the seven criteria, shown in Table 3.2, and related to the readiness for digital transformation, the results indicate that there is strong reliability for the overall questionnaire as the values of the Cronbach's alpha for all of the seven criteria were above 0.584 as shown in table 3.2.

Table (3.2): Cronbach Alpha Coefficients for each Dimension of the Questionnaire.

Criteria	Sections	No of Items	Cronbach's Alpha Coefficient Values
Availability of resources	All items	5	0.584
Computer-self efficacy	All items	5	0.917
Perceived ability to use	All items	6	0.879
Perceived functional benefit	All items	13	0.941
Perceived information quality	All items	4	0.896
Perceived legal framework	All items	5	0.925
Perceived privacy	All items	5	0.876
	All items	**43**	**0.963**

Table 3.2 shows that there are relatively high coefficients. The values of Cronbach`s alpha coefficients range from 0.584 to 0.941. As illustrated in (Hair, Anderson, Tatham, and Black, 1998), a value of (0.70) for alpha and greater represents the standard of internal consistency. Thus, because Cronbach's alpha is acceptable even for dimensions with a small number of items when combined with a total value of 0.948 for the alpha, it strongly underlines that the questionnaire was reliable and has been used in this research study.

The table shows also that the highest coefficient was found for a Perceived functional benefit which has Cronbach's alpha coefficient of 0. 941. The coefficient with the smallest value was the Availability of resources which has a coefficient is 0.584. that because the combined number of items constituted this construct is small compared to Perceived functional benefit for example.

3.6.3 Data Collection Approach

The data was collected through an online questionnaire by email and WhatsApp. In this case, since larger amounts of data would be gathered from respondents it provided a cost-effective method to gather this data quickly (Collis and Hussey, 2014).

3.7 Instrument Development

To develop the research questionnaire, the researcher abstracts and develops the key dimensions based on a comprehensive review of the theoretical framework models of acquirement and adoption of emergent technology. The models are TAM and DGRA (mentioned in Chapter 2). These dimensions will be used to investigate the perceptions of PLA beneficiaries about the services provided through its portal in addition to measuring this readiness towards DX at PLA. The questionnaire is divided into two sections, the first one includes the demographic factors of the respondents including age, qualifications, and spatiality. The second dimensions include (Availability of resources (AOR), Computer-self efficacy (CSE), Perceived Ability to Use (PAU), Perceived functional benefit (PFB), Perceived Content quality (PCQ), Perceived privacy (PP), Regulations and Laws (RL).

The questionnaire will measure the readiness of beneficiaries for PLA e-services provided through its portal. the beneficiaries may be viewed as consumers who expect to receive public value from e-government service usage.

A Likert-type scale with five points to measure the responses of the studied sample that ranged from strongly agree (1), agree (2), neutral (3), disagree (4), and strongly disagree (5). The researcher selected this scale as it can be understood and completed quickly, and it is easy.

Table (3.3): Likert- Scale Table.

strongly agree	agree	neutral	disagree	strongly disagree
1	**2**	**3**	**4**	**5**

Table (3.4): Structure of the Questionnaire.

Information Category	Item	No. of items
Personal and Demographic Information	**PDI**	**4**
Availability of Resources	(AOR)	5
Computer-self efficacy	(CSE)	5
Perceived ability to use	(PATU)	6
Perceived information quality (PIQ)	(MLO)	4
Perceived functional benefit (PFB)	(PIQ)	13
Perceived legal framework (PLF)	(PT)	5
Perceived privacy (PP)	(PS)	5

As shown in Appendix 2, the researcher has managed to develop a specific purpose questionnaire, considered the research questions and hypotheses, and thus achieved the objectives of the research study. The next section illustrates how the data has been gathered.

3.7.1 Research Instruments

After gathering the required data, it has been analyzed using IBM (International Business Machines Corporation) Statistical Package for the Social Sciences –SPSS 20.0. all collected data is analyzed through the following main steps:

(1) Assessing the reliability (internal consistency) using Cronbach's Alpha coefficient and validity with internal consistency.

(2) Analysis of one-way variance (ANOVA One-way) is used to analyze the readiness for digital conversion.

(3) Descriptive statistics such as mean, standard deviation (SD), percentages, and frequency were used to determine readiness.

3.8 Summary

This chapter described the methodology used for the study. The next chapter will provide the results obtained when this methodology was used.

Chapter Four

The Results

4.1 Introduction

The main findings of this research study that answered the research questions are presented and discussed in this chapter. After analyzing the collected data using the SPSS statistical program, we presented the answers to the research questions and thus presented the results of testing the stated hypotheses of this research study. The following sections show the results of the qualitative approach, and quantitative approach analysis respectively, which answers all the research questions for both approaches.

4.1.1 Data Analysis:

In this section, the discourse analysis approach is used to address and analyze the readiness dimensions of DX in PLA, which is an effective method for answering a wide range of research questions and showing the real picture of the current situation at the PLA regarding DX process. The researcher conducted all required interviews with the senior officers from the PLA and MTIT, then the data was collected and analyzed by the discourse approach, and finally, the results were accumulated based on each dimension. The below section shows the results:

First question: What are the viewpoints of senior officers toward DX readiness at the PLA?

Based on the DGRA model (refer to Chapter 2), the various dimensions are measured and analyzed to assess the current situation at PLA towards DX, each dimension is investigated through questions developed and oriented to the interviewees in the PLA

and MITIT ministries. The following answers of interviewees elaborated and reflected the real readiness in PLA towards DX progress and implementation.

4.1.2 Leadership and Governance

DX includes the requirement for numerous modifications, including societal, institutional, technological, and legal ones. Therefore, high-level political support is essential for the government to implement the necessary reforms in a timely and efficient manner.

Regarding this dimension, the PLA shows a strong commitment from the leadership towards DX initiatives, by adopting many approaches and projects to improve the current capabilities to develop a DX strategic plan. That is what Interviewee X affirmed "Yes, the head of the PLA strongly supports this approach" In addition, he said," The strategic plan supports the DX trend which improves services provided to the citizens".

Although the PLA chief shows a high commitment to implementing DX initiatives at the PLA. However, " till now there is no DX strategy, but in the current coordination with World Bank we are going to develop these plan", may the other Y employee clarified" The approval of the World Bank was obtained on April 7, 2021, to prepare a strategic digital transformation plan under a component called information systems assessment and preparation of a digital transformation strategy".

At the government level, the MTIT has developed DX and published it on its website. The strategic plan aligned with national goals and agenda. Employee Z from MTIT noted," There is a strategic plan for DX published on the ministry website that includes strategic goals compatible with national priorities and agenda." The X interviewee elaborated" The plan reflects the government's approach toward digital transformation

at all levels, in addition to DX policy that has been circulated to ministries, it constitutes a cornerstone and starting point for DX in all ministries".

The PLA strategic plan 20-23 includes some strategic goals to improve the DX and simplify the procedures to transform into e-services delivered for some classical services by adopting new technology. these goals are compatible with sustainable global. The R.J from MITIT noted,” There are electronic services that will be launched very soon, such as electronic payment services in some ministries, the X-road updated to ensure speed, security and greater confidentially in the transmission of government data through the government network, these goals compatible with sustainable global development".

4.1.3 User-Centered Design

The user-centered design section looks at how users are consulted and involved in the creation of government digital services, or e-services, across all user groups, including citizens, businesses, and government personnel(Kusmiarto et al., 2021).

The MTIT adopted the initiatives of DX in 2012, and based on its role in supporting the implementation of DX at public organizations, it doesn’t have policies or plans to involve the citizens and other stakeholders in the process of designing, and testing the use of new digital or digital services. Interviewee Z from the PLA affirmed “This is advanced stage that we have not reached yet, but we are following up the reactions and complains about any new services through the complaints department or through the websites itself by SMS messages". Also, the interviewee X from MTIT replied" there is no E-participation service for citizens. However, there are limited awareness campaigns."

4.1.4 Public Administration and Change Management

Public Administration and Change Management section looks at the changes in public administration brought about by the digital transformation. The success of the program depends on this, which is sometimes the most ignored part of digital transformation.

The government doesn't have clear and enough awareness to support change management regarding the transformation process. The MITIT responsible in providing IT trainings to the public employees. These training improve the employee IT skills which support their involving in transformation process. Regarding that, the interviewee T.T. stated: "till now, there are no courses or skills given by the government to any employees". A.B also said: "It didn't happen that the government directed the employees towards training and preparing them for DX. No training or workshop was held in this domain". At PLA N.D noted "there are no training plans in this field since the PLA has no longer a plan in this field. Thus, this topic has not been studied and presented as a training need till now".

4.1.5 Capabilities, Culture, and Skills:

The capacities, culture, and skills section investigate the readiness of the government's human capital for domain experts and practitioners in digital government (internal and contractors), as well as business specialists in administration. Program management, infrastructure and application operations, database management, data analysis, customer/call center service, and other types of training are also necessary. After reviewing the strategic plan for DX at the MTIT, the qualified and highly skilled staff was mentioned as one of the strongest points in the Palestinian environment, and therefore it is one of enablers and supportive factors for successful digital transformation implementation.

However, at PLA there is a shortage of qualified staff who is ready for DX. N.D clarified this point " now, we suffer from the shortage in human cadres, in addition to lack in training courses due to weak government funding in this regard."

4.1.6 Technology Infrastructure

The section on technology infrastructure looks at the common standards, designs, and implementations for the technological infrastructure that have been implemented or are planned for the digital government, whether by the government alone or in collaboration with the private sector. The use of cloud computing technology is considered as a strategic instrument for elastic continuous capacity needed to satisfy digital government ambitions, as well to consolidate data centers or increase server efficiency.

PLA as any public institutions have lack modern technology infrastructure such as computer devices, networks, printers, etc. That is due to financial challenges the government faces. At the same time, the staff, especially in the IT department sought to develop internal applications and programs to facilitate the work at all departments with available resources. Despite the government announcing their initiative to DX, there is a huge lack of resources allocated for smoothly and successful implementation of DX initiatives.

N.A. stated" there is a self-developed system called CLRS that developed and deployed in all PLA offices across the west bank strict, it linked to another internal system. However, it has some drawbacks and not fulfills the requirements of the works”." There are other unified systems such as Bessan System in financial departments that deployed in all ministries, in addition to the Complaints System linked directly to Minister Office through which citizens' complaints are received and fixed". I.K added “There is a

Madenati system through which the scheme is linked to the registration system and PLA portal".

At the government level, the government has a secure network to exchange information between its various agencies. In this regard, R.J. from MITIT said" Yes, there is a governmental network that is used by most ministries, but it needs continuous improvement in security, speed, and confidentiality of data. There is a government decision to use fiber optics within a governmental network to gradually dispense with Paltel". H.T (PLA) clarified also" we use X-road to connect with government network in order to exchange data with other government agencies, it is very slow and overloaded ". M.A stated" Yes, the Land Authority has been linked with other ministries, as well as linking all its offices to the main headquarters through the government network, which operates with high confidentiality and security. a microwave network has recently been deployed to ensure the protection and confidentiality of data ".

"At the government level, there is a decision to not deal and benefit from BLOCKCHAIN technology due to security and privacy issues at the national level". N.D. added" The government refuses to deal with and benefit from cloud services meanwhile, the Ministry of Communication currently working on the same tasks and distributes services to ministries. M.A. stated," We don't use the Internet of Things".

In addition, at PLA, "we have a Data Center and Firewall to manage, protect stored data and take a backup copy continuously" That is what N.A clarified. He added, "We use X-road to connect with the government network to exchange data with other government agencies ".

4.1.7 Data Infrastructure, Strategies, and Governance

Data-driven initiatives are crucial to digital government. To enhance service delivery, it is essential to have the ability to gather, store, analyze, and share data using developing technologies. The use of available data can enhance decision-making, increase efficiency, and provide positive external effects. This section looks at the exchange standards, protocols, and rules related to government data, including its availability, structure, and currency. In this regard, the government develops a framework to identify the data exchanged between public agencies. Y.E from MTIT clarified" "Zinnar website has been established, which is a website through which interconnections between the ministries based on the standardization, definition and encoding the terms from each government agency and constantly updating them to be exchanged based on the relevant authority". While ensuring not repetition and each party is responsible for its terminology". Y.E. stated also “Currently, there is no unified data center for all ministries, work is underway to establish it, however, some ministries store their data in their own data center.

Till now, PLA hasn’t defined or published any terms relating to its work on national networks N.D. assures that "we don’t define or publish any terms on Zinnar website, there is only cooperation with Interior Ministry to exchange metadata such as person's ID”.

Regarding the use of modern technology such as artificial intelligence, and I Cloud, the question circulated to the staff of MTIT was: does the government the modern technologies such as the Internet of Things, artificial intelligence, or others, and does it have an openness to use it if it doesn’t use it?

The government doesn’t benefit from any emergent technologies such as Cloud services or artificial intelligence to improve data security and management. R.J. stated that" the

Palestinian government refused to purchase cloud service from foreign companies to preserve the confidentially and security of Palestinian information. However, it is currently working on allocating a private cloud space for the Palestinian government to be later subscribed to by government agencies through a specific account".

Thus, ensuring storage, use, and maintaining greater confidentially and security as the service is managed by the Palestinian government only. with a proposal to make the backup and deposit it in one of the Palestinian foreign embassies as a kind of protection from disaster, especially Israeli occupation.

4.1.8 Legislation and Regulation

A robust legal and regulatory environment that includes new legislation for data privacy, consumer protection, digital signatures, digital identity, cybersecurity mitigation, etc. is required for a digital government. These rules will also increase transparency in many public expenditure decisions and any data-driven e-services, such as e-procurement processes.

The government enacted a personal data protection policy which was circulated to the ministry. That is what R.S. assured from MITIT "Yes, the information security and protection were approved and circulated to the ministries to work with". T.A "The digital transformation policy was recently approved by the Council of Ministers, whereby this policy was circulated to the ministries to work accordingly, each in his field of work.

In addition, the government issued a law for enabling DX in various sectors. R, J from MITIT affirmed that" there are some legislations for digital transformation, including what needs to be modified and developed, such as the Information Security Law, electronic payment, electronic tag, person verification, and others".

The electronic crime law has also been enacted but it needs improvements to be enforced by competent authorities. R.S. elaborated “Yes, the electronic crime law has been approved, but it needs to be developed and implemented by the competent authorities".

There are some laws and legislations passed for the protection of Data through transaction processes and e-services delivery, in addition to ensuring the safety of transaction procedures.

Law No. 3 of 2019 was approved for the protection of personal data, and according to Article 1 of this law, it is prohibited to use personal data (direct/indirect) of citizens receiving services from companies and institutions that provide them for commercial purposes, without obtaining their prior permission, under penalty of peril.

Electronic Transactions Law No. 6 (of 2013 AD) came to cover the legal aspects necessary to ensure the safety of procedures related to the use of electronic transactions. It is noteworthy that the fourth chapter of the Electronic Transactions Law No. (6) of 2013 AD includes five articles that stipulate and clarify the mechanisms of electronic financial transactions, which are articles: (24,25,26,27,28).

4.1.9 Digital Ecosystem

The section on the digital ecosystem looks at organizations and people outside of the government who can help advance the agenda for and with the implementation of digital government. The government has lacked a center specialized in business and modern technology such as artificial intelligence, the Internet of Things, Blockchain…etc. **A.S added "**There is a training center in the Ministry of Communications that offers some courses in various topics, including those related to the use of computers for government employees according to their training needs. As

for modern technology, such as the Internet of Things, big data analysis, and others, there is no specialized center for training on these topics.

N.D "There is a training center in the Ministry of Communications, but it does not address these topics, and I do not think that there is any government training center that offers such courses".

T.A" There are no government centers that offer such courses, except the Call center, and it never addresses such modern technology, but rather courses on the use of computers, Office, and others.

Whoever wants to develop himself from the staff resorts to paid courses and at his expense, usually online".

The next section will analyze the data collected by questionnaire to answer the second question of the research which is “What is the degree of DX readiness at the PLA from the views of its beneficiaries?

4.1.10 Quantitative Approach

In this research work, we used a descriptive analysis approach, which involves calculating the means of variables and percentages for each statement addressing the set of relevant items dimensions and including the number of respondents, the mean on a 5-5-point Likert-type scale, where the scale “1” represents strongly agree and the scale “5” represents strongly disagree, the percentage of respondents indicating agree or strongly agree, the standard deviation, and the rank based on the percentage. In this research study, the researcher used the following scale system, shown in Table 4.1, to evaluate the degree of the agreement.

Table (4.1) The Mean Likert-Type Value and Agreement Descriptor.

Mean Likert-type Value	Agreement Descriptor
1-1.80	Very Low
1.81 -2.60	Low
2.61 -3.40	Moderate
3.412-4.20	High
4.21-5	Very high

Table (4.2): The Correlation Between DX and Constructs.

Correlations		Digital Transformation
Availability of resources (AOR)	Pearson Correlation	.517**
	Sig. (2-tailed)	.000
	N	152
Computer-self efficacy (CSE)	Pearson Correlation	.564**
	Sig. (2-tailed)	.000
	N	152
Perceived ability to use (PATU)	Pearson Correlation	.820**
	Sig. (2-tailed)	.000
	N	152
Perceived functional benefit (PFB)	Pearson Correlation	.867**
	Sig. (2-tailed)	.000
	N	152
Perceived information quality (PIQ)	Pearson Correlation	.861**
	Sig. (2-tailed)	.000
	N	152
Perceived legal framework (PLF)	Pearson Correlation	.888**
	Sig. (2-tailed)	.000
	N	152
Perceived privacy (PP)	Pearson Correlation	.811**
	Sig. (2-tailed)	.000
	N	152

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

As shown in the table above, there is a positive and significant relationship between the DX and its determined factors. The highest positive relationship is between perceived legal framework (PLF) and DX whereas the correlation value is equal to 0.888. Where the lowest value is with Availability of resources (AOR) equals 0.517.

Table (4.3): Reality Readiness Toward DX at PLA from the Perceptions of Beneficiaries.

Statement	Rank	N	Mean	STD. Deviation	Percentage
Availability of Resources (AoR)		152	**3.72**	**0.61**	**74.4%**
Computer-Self Efficacy (CSE)		152	**4.12**	**0.71**	**82.4%**
Perceived Ability to use (PATU)		152	**3.40**	**0.80**	**67.9%**
Perceived Functional Benefit (PFB)		152	**3.21**	**0.80**	**64.2%**
Perceived Information Quality (PIQ)		152	**3.22**	**0.83**	**64.3%**
Perceived Legal Framework (PLF)		152	**3.30**	**0.86**	**65.9%**
Perceived Privacy (PP)		152	**3.36**	**0.88**	**67.1%**
Mean			**3.47**	**0.78**	

As seen in Table (4.3), the level of readiness toward DX in PLA was evaluated at the highest value (Mean equal to 3.47 is between (**3.80-4.05**) standard deviation about (**0.78).** The highest mean is the second dimension Computer-Self Efficacy (CSE) with a mean of (**4.12)**, a standard deviation (of **0.71**) while the lowest mean is the fourth dimension that is (Perceived Functional Benefit (PFB)which has a mean of (**3.21** and standard deviation about **0.80**). the result indicates to high awareness and skills of the respondents using and benefiting from emerging technology and e-services provided by PLA websites. At the same, time the result shows that the function of the PLA website doesn't meet the respondent requirements.

Availability of Resources (AOR)

Table (4.4): Availability of Resources.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	I have a computer or any digital device through which I can connect and benefit from the internet.	1	152	4.55	0.56	91.0%
2	I have a permanent internet access line.	2	152	4.38	0.76	87.6%
3	The quality of the internet service is good	4	152	3.41	0.97	68.2%
4	I have a scanner or a smart application for attaching any required documents to accomplish transactions electronically.	5	152	3.34	1.27	66.8%
5	The internet access services are low cost.	3	152	2.94	1.23	58.8%
	Mean		**152**	**3.72**	**0.61**	**74.4%**

As seen in Table (4.4), the results indicate a high level of agreement among the respondents regarding the availability of resources as the mean is equal to (3.72) with an STD of (0.61). The first statement “I have a computer or any digital device through which I can connect and benefit from the internet.” has the highest mean, that is (4), and STD (0.56) indicates the availability of resources with the beneficiaries that enable them to benefit from e-services delivered by the PLA and other organizations. The lowest mean is for the fifth statement," The internet access services are low cost “with a mean of (2.94) and STD (1.23) which indicates a high agreement among the respondents on the high cost of internet access in Palestine.

Computer-Self Efficacy (CSE)

Table (4.5): Computer-Self Efficacy.

NO	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	I have the qualifications to use the computer and its applications.	1	152	4.22	0.78	84.4%
2	I have the abilities and skills to use the internet.	5	152	4.18	0.76	83.6%
3	I have enough skills to use government websites	3	152	4.15	0.77	83.0%
4	I have enough skills for uploading and downloading files from websites and saving them	4	152	4.13	0.78	82.6%
5	I can use the scanner to convert the documents to digital format.	2	152	3.92	0.98	78.4%
	Mean		**152**	**4.12**	**0.71**	**82.4%**

As seen in Table (4.5), the results indicate a high level of agreement among the respondents regarding the first statement which is “I have the qualifications to use the computer and its applications.” With a mean (4.22) and STD (0.78). that means the beneficiaries have the required qualifications to use the computers and their application to get PLA e-services. The lowest mean is for the fifth statement" I can use the scanner to convert the documents to digital format” with a mean of (3.92) and STD (.98) which indicates that the beneficiaries have no skills in using a scanner to interact properly with the PLA website.

Perceived Ability to use (PATU)

Table (4.6): Perceived Ability to Use.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	I know that PLA offers some of its services on its website.	1	152	3.74	0.91	74.8%
2	The services provided by the PLA website are officially approved by the PLA.	2	152	3.47	1.03	69.4%
3	I prefer to deal with and benefit from the services of the PLA through the website.	3	152	3.43	1.09	68.6%
4	The PLA website provides necessary links to other government websites.	4	152	3.30	1.06	66.0%
5	All procedures for all transactions and deals are listed on the PLA website.	6	152	3.27	1.01	65.4%
6	All announcements and news related to the PLA electronic services are listed on the PLA website.	5	152	3.15	1.01	63.0%
	Mean		**152**	**3.40**	**0.80**	**67.9%**

Table (4.6) points to the beneficiaries' knowledge that the PLA has a website to deliver its services. The first statement illustrated that which is "I know that PLA offers some of its services on the website." with a mean of (3.74) with an STD of (0.91). the fifth statement has the lowest mean "with means 3.15 and STD 1.01. which means strong agreement among the respondents that their needs are not satisfied regarding the e-services provided by the PLA website.

Perceived Functional Benefit (PFB)

Table (4.7): Perceived Functional Benefit.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	I can use the PLA website at any time	1	152	3.82	0.89	76.4%
2	I can use the PLA website from anywhere.	2	152	3.79	0.88	75.8%
3	The design of the PLA website is very suitable in terms of color.	13	152	3.38	1.00	67.6%
4	PLA website design is convenient.	12	152	3.36	1.00	67.2%
5	The PLA website responds quickly to any requests.	3	152	3.33	0.93	66.6%
6	It does not take too much time to complete service from the PLA website compared to traditional government service	4	152	3.22	1.10	64.4%
7	The website provides all the relevant information necessary to fulfill my needs	11	152	3.18	1.01	63.6%
8	I find the required information easily on the PLA website.	7	152	3.16	1.11	63.2%
9	The PLA website provides sufficient information on how to use it safely.	8	152	3.16	1.06	63.2%
10	I can view state property and benefit from it through the PLA website.	5	152	2.96	1.06	59.2%
11	I receive a quick electronic response when any problem occurs with my transactions.	10	152	2.86	1.07	57.2%
12	I can complete any services permanently without going in person to the PLA offices.	9	152	2.78	1.16	55.6%
13	I can pay the required fees electronically.	6	152	2.73	1.22	54.6%
	Mean		**152**	**3.21**	**0.80**	**64.2%**

As shown in Table (4.7), the results indicate high agreement among the respondents on the moderate functional level of the PLA website; the mean is equal to (3.21) with STD (0.80). That means that the respondents have moderate satisfaction with the

functionality of the PLA website. The first statement has the highest mean (3.82) among the others. It ensures moderate agreement among the respondents on getting e-services of the PLA at all times. The lowest mean is for the sixth statement which is" I can pay the required fees electronically “with a mean (of 2.73) and STD (1.22) which means strong agreement among the respondents on the low possibility of paying the required fees electronically through the PLA website.

Perceived Information Quality (PIQ)

Table (4.8): Perceived Information Quality.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	The information provided on the PLA website is easy to understand.	2	152	3.38	0.90	67.6%
2	Information provided on the PLA website is up to date.	1	152	3.28	0.93	65.6%
3	The PLA website provides accurate information about the provided services.	3	152	3.26	0.94	65.2%
4	The PLA website presents electronic services in different languages	4	152	2.95	1.02	59.0%
	Mean		**152**	**3.22**	**0.83**	**64.3%**

As seen in Table (4.8), the respondents show moderate agreement on the information quality received through the PLA website. Since the (PIQ) mean is (3.22) with (STD) (0.83). The fourth statement shows the lowest mean (2.95) which means strong agreement among the respondents on the lowest possibility of presenting PLA services in different languages.

Perceived Legal Framework (PLF)

Table (4.9): Perceived Legal Framework.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	PLA website clearly provides the government policies and laws organizes its functions.	1	152	3.39	0.98	67.8%
2	The policies and laws of electronic services provided by the PLA are listed on the PLA website.	2	152	3.34	0.96	66.8%
3	Land laws, procedures, and general policies are listed on the PLA website.	4	152	3.34	1.00	66.8%
4	All services provided through the PLA website are legally guaranteed and protected	3	152	3.26	0.95	65.2%
5	Civil service and labor laws and procedures relating to public service are listed on the PLA website.	5	152	3.16	1.01	63.2%
	Mean		**152**	**3.30**	**0.86**	**65.9%**

As seen in Table (4.9), the results show a moderate agreement (mean is (3.3) with (STD) of (0.86) among the respondents on the legal framework of the e-services provided by the PLA website. That means that the PLA website doesn't support its e-services legally, therefore it is difficult for the beneficiaries to trust any e-services delivered through this website.

the highest mean is for the first statement that is "PLA website provides the government policies and laws organize its functions with a mean of (3.39) with STD (0.98) The lowest mean is for the fifth statement that is" Civil service and labor laws and procedures relating to public service are listed on the PLA website "with a mean of (3.16) and STD (1.01) which means the strong agreement among the respondents on weakness the law enacted for regulating services provided through PLA website.

Perceived Privacy (PP)

Table (4.10): Perceived Privacy.

No	Statement	Rank	N	Mean	Std. Deviation	Percentage
1	The government bears full responsibility for any insecurity while interacting with the PLA website.	3	152	3.63	1.07	72.6%
2	PLA website is responsible for any breach of my personal information that occurs through the website.	2	152	3.58	1.11	71.6%
3	The security and privacy policies are clearly stated on the PLA website.	4	152	3.28	1.06	65.6%
4	I can object to sharing my personal information through the PLA website.	1	152	3.27	1.01	65.4%
5	My identity and official capacity as an owner or agent be verified electronically through the PLA website.	5	152	3.02	1.11	60.4%
	Mean		152	3.36	0.88	67.1%

Table (4.10) shows that the respondents have moderate agreement on the perceived privacy that the PLA website supported. Since the mean is (3.36) with (STD) (.88). that means that the respondents see the PLA website as weak in supporting their privacy while conducting their transactions through the PLA website. They aspire to more attention in this regard especially related to their personal information.

4.2 Hypotheses

There are no statistically significant differences between the means of digital transformation readiness at **α**<= 0.05 due to the demographic variables (scientific qualification, gender, and scientific specialization).

4.2.1 Hypotheses Testing

The main hypothesis states "There are no statistically significant differences between the means of digital transformation readiness at $\alpha <= 0.05$ due to the demographic variables (scientific qualification, gender, and scientific specialization)."

To test the significant differences due to scientific qualifications, we used the ANOVA test.

The table below (4.11) Analyzes the differences in the mean readiness dimensions measured towards DX at PLA. The tendency shows that computer-self efficacy (CSE) has a higher mean equal to 4 due to a specialty in Technology and engineering sciences. This means that most of the respondents have the skills and awareness towards DX specializes in Human Sciences and Technology and engineering sciences.

Tables (4.11): Differences in Means for DX Readiness Dimensions regarding the scientific qualifications.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Availability of resources (AOR)	Human Sciences	54	3.6778	.59611	.08112	3.5151	3.8405	2.20	5.00
	Medical sciences	5	3.3200	.71554	.32000	2.4315	4.2085	2.40	4.00
	Technology and engineering sciences	41	3.8244	.57826	.09031	3.6419	4.0069	2.60	5.00
	Other	52	3.7269	.63249	.08771	3.5508	3.9030	2.40	5.00
	Total	152	3.7224	.60900	.04940	3.6248	3.8200	2.20	5.00
Computer-self efficacy (CSE)	Human Sciences	54	4.1741	.58154	.07914	4.0153	4.3328	2.60	5.00
	Medical sciences	5	3.8400	.86487	.38678	2.7661	4.9139	2.60	5.00
	Technology and engineering sciences	41	4.4146	.52228	.08157	4.2498	4.5795	3.00	5.00
	Other	52	3.8538	.83934	.11640	3.6202	4.0875	1.00	5.00
	Total	152	4.1184	.70733	.05737	4.0051	4.2318	1.00	5.00
Perceived ability to use (PATU)	Human Sciences	54	3.4502	.77063	.10487	3.2398	3.6605	2.33	5.00
	Medical sciences	5	3.1340	.37978	.16984	2.6624	3.6056	2.50	3.50
	Technology and engineering sciences	41	3.3451	.92292	.14414	3.0538	3.6364	1.00	5.00
	Other	52	3.4038	.77817	.10791	3.1872	3.6205	1.83	5.00
	Total	152	3.3956	.80404	.06522	3.2667	3.5244	1.00	5.00

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
Perceived functional benefit (PFB)	Human Sciences	54	3.2939	.78485	.10680	3.0797	3.5081	2.00	5.00
	Medical sciences	5	3.0920	1.20885	.54061	1.5910	4.5930	2.00	5.00
	Technology and engineering sciences	41	3.1183	.67849	.10596	2.9041	3.3324	1.69	5.00
	Other	52	3.2023	.86435	.11986	2.9617	3.4429	1.85	5.00
	Total	152	3.2086	.79654	.06461	3.0809	3.3362	1.69	5.00
Perceived information quality (PIQ)	Human Sciences	54	3.2685	.84235	.11463	3.0386	3.4984	1.75	5.00
	Medical sciences	5	2.7000	1.29180	.57771	1.0960	4.3040	2.00	5.00
	Technology and engineering sciences	41	3.1890	.82874	.12943	2.9274	3.4506	2.00	5.00
	Other	52	3.2308	.76991	.10677	3.0164	3.4451	2.00	5.00
	Total	152	3.2155	.82793	.06715	3.0828	3.3481	1.75	5.00
Perceived legal framework (PLF)	Human Sciences	54	3.3667	.86417	.11760	3.1308	3.6025	1.20	5.00
	Medical sciences	5	3.0000	1.29615	.57966	1.3906	4.6094	2.00	5.00
	Technology and engineering sciences	41	3.2732	.81087	.12664	3.0172	3.5291	1.60	5.00
	Other	52	3.2692	.86581	.12007	3.0282	3.5103	1.60	5.00
	Total	152	3.2961	.85968	.06973	3.1583	3.4338	1.20	5.00
Perceived privacy (PP)	Human Sciences	54	3.4074	.86261	.11739	3.1720	3.6429	1.00	5.00
	Medical sciences	5	2.8400	1.25220	.56000	1.2852	4.3948	2.00	5.00
	Technology and engineering sciences	41	3.3415	.84882	.13256	3.0735	3.6094	1.00	5.00
	Other	52	3.3654	.88802	.12315	3.1182	3.6126	1.60	5.00
	Total	152	3.3566	.87736	.07116	3.2160	3.4972	1.00	5.00

As seen in table 4.11, ANOVA analysis among seven criteria in terms of specialty group (Human Sciences, Medical Science, technology, engineering science, and, others). The ANOVA analysis result assures the statistical descriptive results. The computer-self efficacy (CSE) has statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the arithmetic averages of the responses of the study sample toward digital transformation due to PLA. Which is that the overall respondents agree on computer self-efficacy (CSE) whose specialty is Technology and engineering sciences and Human Sciences.

ANOVA

Table (4.12): Analysis of ANOVA in Terms of Specialty Group.

		Sum of Squares	df	Mean Square	F	Sig.
Availability of resources (AOR)	Between Groups	1.345	3	.448	1.214	.307
	Within Groups	54.659	148	.369		
	Total	56.004	151			
Computer-self efficacy (CSE)	Between Groups	7.792	3	2.597	5.674	.001
	Within Groups	67.756	148	.458		
	Total	75.548	151			
Perceived ability to use (PATU)	Between Groups	.611	3	.204	.311	.818
	Within Groups	97.006	148	.655		
	Total	97.617	151			
Perceived functional benefit (PFB)	Between Groups	.797	3	.266	.414	.743
	Within Groups	95.009	148	.642		
	Total	95.806	151			
Perceived information quality (PIQ)	Between Groups	1.521	3	.507	.736	.532
	Within Groups	101.985	148	.689		
	Total	103.506	151			
Perceived legal framework (PLF)	Between Groups	.766	3	.255	.341	.796
	Within Groups	110.831	148	.749		
	Total	111.598	151			
Perceived privacy (PP)	Between Groups	1.487	3	.496	.639	.591
	Within Groups	114.746	148	.775		
	Total	116.233	151			

In Table 4.12, the researcher concludes that the computer-self efficacy (CS) has the highest mean which is considered the highest readiness of criteria for DX at PLA. Also, the descriptive statistic shows the range of age between 18 to 49 have higher computer self-efficacy (as mean equal 4) for those whose age is over 50.

Descriptive

Table (4.13)**: The Differences of Dimensions Mean Regarding the Age Variable**

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Availability of resources (AOR)	18-29	35	3.6914	.62184	.10511	3.4778	3.9050	2.40	5.00
	30-39	57	3.6842	.58912	.07803	3.5279	3.8405	2.40	5.00
	40-49	36	3.7722	.69636	.11606	3.5366	4.0078	2.20	5.00
	more than 50	24	3.7833	.51724	.10558	3.5649	4.0017	2.80	5.00
	Total	152	3.7224	.60900	.04940	3.6248	3.8200	2.20	5.00
Computer-self efficacy (CSE)	18-29	35	4.0629	.49887	.08432	3.8915	4.2342	3.00	5.00
	30-39	57	4.3614	.56624	.07500	4.2112	4.5116	3.00	5.00
	40-49	36	4.0944	.82737	.13789	3.8145	4.3744	2.20	5.00
	more than 50	24	3.6583	.84951	.17341	3.2996	4.0170	1.00	5.00
	Total	152	4.1184	.70733	.05737	4.0051	4.2318	1.00	5.00
Perceived ability to use (PATU)	18-29	35	3.1283	.98174	.16594	2.7910	3.4655	1.00	5.00
	30-39	57	3.4998	.77038	.10204	3.2954	3.7042	1.67	5.00
	40-49	36	3.5133	.76688	.12781	3.2539	3.7728	1.83	5.00
	more than 50	24	3.3613	.56651	.11564	3.1220	3.6005	2.33	4.67
	Total	152	3.3956	.80404	.06522	3.2667	3.5244	1.00	5.00
Perceived functional benefit (PFB)	18-29	35	3.1080	.93191	.15752	2.7879	3.4281	1.69	5.00
	30-39	57	3.3211	.71634	.09488	3.1310	3.5111	2.15	5.00
	40-49	36	3.2267	.85339	.14223	2.9379	3.5154	1.92	5.00
	more than 50	24	3.0608	.67380	.13754	2.7763	3.3454	1.85	4.15
	Total	152	3.2086	.79654	.06461	3.0809	3.3362	1.69	5.00
Perceived information quality (PIQ)	18-29	35	3.1357	.99510	.16820	2.7939	3.4775	2.00	5.00
	30-39	57	3.3202	.76438	.10124	3.1174	3.5230	1.75	5.00
	40-49	36	3.2083	.88135	.14689	2.9101	3.5065	2.00	5.00
	more than 50	24	3.0938	.61597	.12573	2.8336	3.3539	2.00	4.25
	Total	152	3.2155	.82793	.06715	3.0828	3.3481	1.75	5.00
Perceived legal framework (PLF)	18-29	35	3.1829	1.04979	.17745	2.8222	3.5435	1.60	5.00
	30-39	57	3.4702	.72456	.09597	3.2779	3.6624	2.00	5.00
	40-49	36	3.2333	.86915	.14486	2.9393	3.5274	2.00	5.00
	more than 50	24	3.1417	.81823	.16702	2.7962	3.4872	1.20	4.60
	Total	152	3.2961	.85968	.06973	3.1583	3.4338	1.20	5.00
Perceived privacy (PP)	18-29	35	3.1486	1.02480	.17322	2.7965	3.5006	1.00	5.00
	30-39	57	3.4737	.78434	.10389	3.2656	3.6818	2.00	5.00
	40-49	36	3.4278	.88692	.14782	3.1277	3.7279	2.00	5.00
	more than 50	24	3.2750	.83158	.16975	2.9239	3.6261	1.00	4.60
	Total	152	3.3566	.87736	.07116	3.2160	3.4972	1.00	5.00

As seen in table 4.13, ANOVA analysis among seven groups of readiness criteria shows the results that there are 1/7 criteria with sig. < 0.05, indicating that there are differences between the groups in terms of readiness for digital transformation at PLA due to age categories. The computer-self efficacy (CSE) he a strong significant Difference es(sig=.000) with other ANOV analysis seven criteria in terms of a group (18-29, 30-39,40-49, over 50). The ANOVA analysis result ensures that the computer-self efficacy (CSE) has statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the arithmetic averages of the responses of the study sample towards the digital transformation at PLA due to age categories. the overall respondents agree on Computer-self efficacy (CSE) especially those whose age comes between 18-40.

1- There are no statistically significant differences between the means of digital transformation readiness at **α**<= 0.05 due to the Qualification.

The table below, the result indicates variance in respondents about their readiness towards DX at PLA, the most agreement between them was on the computer-self efficacy (CSE) with a total mean (of 4) especially of (Diploma, BA, Graduate Studies).

Descriptive

Table (4.14): Analysis of ANOVA in terms of qualifications group.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Availability of resources (AOR)	Secondary	5	3.4400	.32863	.14697	3.0319	3.8481	3.20	4.00
	Diploma, BA	79	3.6228	.57645	.06486	3.4937	3.7519	2.40	5.00
	Graduate Studies	68	3.8588	.63721	.07727	3.7046	4.0131	2.20	5.00
	Total	152	3.7224	.60900	.04940	3.6248	3.8200	2.20	5.00
Computer-self efficacy (CSE)	Secondary	5	3.2800	.26833	.12000	2.9468	3.6132	3.00	3.60
	Diploma, BA	79	4.0582	.63662	.07163	3.9156	4.2008	2.60	5.00
	Graduate Studies	68	4.2500	.75971	.09213	4.0661	4.4339	1.00	5.00
	Total	152	4.1184	.70733	.05737	4.0051	4.2318	1.00	5.00
Perceived ability to use (PATU)	Secondary	5	2.9680	.39771	.17786	2.4742	3.4618	2.50	3.50
	Diploma, BA	79	3.3794	.85710	.09643	3.1874	3.5713	1.00	5.00
	Graduate Studies	68	3.4459	.75880	.09202	3.2622	3.6296	1.67	5.00
	Total	152	3.3956	.80404	.06522	3.2667	3.5244	1.00	5.00
Perceived functional benefit (PFB)	Secondary	5	2.5980	.67277	.30087	1.7626	3.4334	2.00	3.46
	Diploma, BA	79	3.1737	.75445	.08488	3.0047	3.3427	1.85	5.00
	Graduate Studies	68	3.2940	.83881	.10172	3.0909	3.4970	1.69	5.00
	Total	152	3.2086	.79654	.06461	3.0809	3.3362	1.69	5.00
Perceived information quality (PIQ)	Secondary	5	2.6500	.72024	.32210	1.7557	3.5443	2.00	3.75
	Diploma, BA	79	3.1835	.82013	.09227	2.9998	3.3672	1.75	5.00
	Graduate Studies	68	3.2941	.83637	.10142	3.0917	3.4966	2.00	5.00
	Total	152	3.2155	.82793	.06715	3.0828	3.3481	1.75	5.00
Perceived legal framework (PLF)	Secondary	5	2.2800	.68702	.30725	1.4269	3.1331	1.60	3.40
	Diploma, BA	79	3.2810	.83483	.09393	3.0940	3.4680	1.20	5.00
	Graduate Studies	68	3.3882	.86032	.10433	3.1800	3.5965	1.60	5.00
	Total	152	3.2961	.85968	.06973	3.1583	3.4338	1.20	5.00
Perceived privacy (PP)	Secondary	5	2.5200	.48166	.21541	1.9219	3.1181	2.00	3.00
	Diploma, BA	79	3.3241	.85713	.09643	3.1321	3.5160	1.00	5.00
	Graduate Studies	68	3.4559	.89566	.10861	3.2391	3.6727	1.00	5.00
	Total	152	3.3566	.87736	.07116	3.2160	3.4972	1.00	5.00

The next chapter will conclude the results of the analysis process and provide the implications of the study on the research's community and the local and public institutions. In addition, it provides recommendations for future research.

Chapter Five:

Summary, Conclusion, and Implications

Generally, this chapter summarizes the main findings, and future implications, and then outlines the main recommendations for future directions of this research work. The summary of findings section introduces an overview of the thesis objectives, and method of data gathering, followed by the analysis of the collected data. In section 2, we presented the major implications and suggestions for future practices based on the main findings of this thesis, which should be carried out by PLA institutions. Finally, the third section in this chapter reveals the recommendations for future directions that provide suggestions for further studies related to the topic of this thesis.

5.2 Summary of Findings

This thesis aims to measure the readiness toward DX at PLA as a strategic choice from the perspectives of high-ranked employees and the beneficiaries of PLA. The PLA's high-ranked employees' and beneficiaries' perceptions have been investigated to find responses to the main research question taking into consideration the role of these employees at PLA, the services currently provided either by the PLA portal or in a classical way, in addition to DX readiness dimensions.

The answers to research questions:

1- What are the viewpoints of high-ranked officers towards DX readiness at the PLA?

2- What is the degree of DX readiness at the PLA from the views of its beneficiaries?

The main findings regarding these research questions are discussed and presented as follows:

The First Question: What are the viewpoints of high-ranked officers towards DX readiness at the PLA?

To respond to this main question, the researcher followed a qualitative approach for a deep understanding of the real situation at PLA regarding DX initiatives.

5.3 Discussion of Qualitative Approach results:

The main dimensions of DX readiness abstracted from the DGRA model are (Leadership and Governance, User-Centered Design, Public Administration and Change Management, Capabilities, Culture and Skills, Technology Infrastructure, Data Infrastructure, Strategies, and Governance, Legislation and Regulation, and Digital Ecosystem). Those dimensions were investigated through structured and semi-structured interviews conducted with the targeted population. Target population including the high-ranked employees at PLA and MTIT The perceptions of those employees were collected, analyzed using a discourse approach, and summarized in the following section:

1- **Leadership and Governance:** The PLA leadership shows strong support for the DX initiatives. The PLA has a vision for the DX initiative and there is a high commitment to approach the strategy of DX.

2- **User-Centered Design:** There are no policies or plans to involve the citizens and other stakeholders in the process of designing, testing, and use of new digital or digital services. Furthermore, at the government level, there are limited awareness campaigns about DX initiatives.

3- **Public Administration and Change Management:** Despite the importance of this dimension for the administration of the digital transformational process. The PLA and the MITIT don't have a clear and enough awareness plan to support change

management in the transformation process which definitely leads to the failure of DX's adoption.

4- **Capabilities, Culture, and Skills:** human capital readiness is considered the main enabler for successful DX implementation, but the PLA has a shortage in these capabilities which leads to the failure of any initiatives of DX.

5- **Technology Infrastructure:** PLA is any public institution lacking modern technology infrastructure such as computer devices, networks, and printers. In addition to a strong shortage in new emergent technology such as BLOCKCHAIN, the Internet of Things and cloud computing that seen as strategic tools to achieve the flexible and fast deployment and elastic continuing capacity needed to meet digital government goals, as well as a form of data center consolidation or server efficiency.

6- **Data Infrastructure, Strategies, and Governance**: PLA doesn't encode, define, standardized, or publish any terms relating to its work on the Zinnar website to ensure the exchange of data with other public agencies and beneficiaries, in addition, PLA doesn't benefit from any emergent technologies such as Cloud services or artificial intelligence to improve data security and management. Currently, there is no unified data center for all ministries including PLA, work is underway to establish it, and however PLA store and manage data in its own data center independently**.**

7- **Legislation and Regulation: Regarding personal data protection, t**he Law No. 3 of 2019 was enacted and approved. According to Article 1 of this law, it is prohibited to use personal data (direct/indirect) of citizens receiving services from companies and institutions that provide them for commercial purposes, without obtaining their prior permission, under penalty of peril. Electronic Transactions Law

No. 6 (of 2013 AD) covered the legal aspects necessary to ensure the safety of procedures conducted through public organizations' interactive websites. It is noteworthy that the fourth chapter of Electronic Transactions Law No. (6) of 2013 AD includes five articles that stipulate and clarify the mechanisms of electronic financial transactions, which are articles: (24,25,26,27,28.)

8- Digital Ecosystem: At the government level, no training center is specialized in modern technology such as artificial intelligence, the Internet of things, Blockchain, big data analysis…etc. There is just a training center in the Ministry of Communications that offers some courses on various topics, including those related to the use of computers for government employees according to their training needs.

The Main Findings of this Research Concluded as Follows:

The research study found that the interviewees have an awareness and understanding of the positive impacts of utilizing new technologies on the efficiency and effectiveness of the services provided to the beneficiaries. However, in terms of understanding digital transformation, most participants understand DX as automation the current procedures, or using digital technologies and computerized systems without any changes in structure, plans, or supported laws. etc. However, a small number of the participants indicated that they are aware that digital transformation involves more than implementing certain digital technologies. Rather than it requires changing the PLA structure to involve specific departments for new DX duties, leader support, IT skills, employees' abilities, availability of the digital transformation strategy, and availability of new technologies in addition to modified the current laws.

Despite the commitments and support of PLA leadership to the DX initiatives, the results affirm that they don't have a clear roadmap to achieve it. Furthermore, the results show the absence of a DX strategic plan, a lack of qualified and skilled employees regarding DX issues, a lack of resources, weak change management, and a weak culture of transformational processes into e-services. In addition to the lack of a regulatory framework that organizes and legislates the process of DX, all these challenges will hinder any progress toward implementing DX initiatives.

On the other side, despite the launching of the DX plan at the government level in 2012, the Palestinian government doesn't allocate the needed resources to support implementing the DX plan in ministries. The resources such as financial, human, knowledge and expertise, and modern technologies. For example, the Palestinian government refused to purchase cloud services from foreign companies reasoning that to preserve the confidentially and security of Palestinian information. However, it is currently working on allocating a private cloud space for the Palestinian government to be used by government agencies through a specific account".

In the following section, the researcher will answer the second research question which is: what is the degree of DX readiness at the PLA from the views of its beneficiaries?

To have a clear and comprehensive knowledge of the readiness of the PLA and its beneficiaries toward DX initiatives, the researcher followed the quantitative approach. through this approach, the survey questionnaire was utilized as the main instrument for data collection. Hence, a self-completion, well-structured questionnaire was developed based on the TAM model and other models (mentioned in Chapter 2) to suit the case

study context. Then it was distributed to a targeted sample who benefited from PLA services through its website, where participation was completely voluntary.

To answer the second question, the researcher analyzed the gathered data from the sample using the SPSS software version (25). Both descriptive and inferential statistics were used. The descriptive statistics include measures of central tendency and dispersion measures descriptive. The findings are summarized as follows:

1- In the beginning, the determinant constructs that measure the readiness of DX are (Availability of resources (AOR), Computer-self efficacy (CSE), Perceived ability to use (PATU), Perceived functional benefit (PFB), Perceived information quality (PIQ), Perceived legal framework (PLF), Perceived privacy (PP) have strong significant towards DX.

2- The E-readiness assessment process that has been conducted through this research study permits beneficiaries to understand the current state of the services provided online, the current infrastructure, The regulatory and legal framework, the current situation of human resources and skills, in addition to the main obstacles to the implementation of digital transformation. Based on the results of this research study, we believe that it is necessary to produce clear strategies and action plans to build the capabilities of human resource and to define the legislative frameworks, and the institutional and technical infrastructures necessary to start implementing the digital transformation in PLA.

Discussion of Quantitative Approach results:

1- The factor Computer-self efficacy (CSE) has the highest percentage (**82.4%)** of readiness towards DX. That means the respondents confirmed that they have a high level of qualifications, skills, and abilities to use computers, the internet, and

applications of digital systems. Whereas the second highest factor (**74.4%**) is the Availability of Resources (AoR) Most beneficiaries have adequate technical resources including computer devices, internet access, scanners, and other applications to use the website of the government to benefit from the e-services provided. (mean=3.72). Another while, most of the respondents affirmed the highest cost of internet access in Palestine.

2- The construct Perceived Ability to Use (PATU) has a weak percentage of readiness level toward DX. The beneficiaries don't find the required procedures of transactions, links for other agencies, and all announcements and news related to the PLA electronic services listed on the PLA website.

3- The fourth dimension which is (Perceived Functional Benefit (PFB)) has the lowest mean (**3.21**) and percentage of readiness (**64.2%**) towards DX. which indicates that the functionality of the PLA website doesn't meet the beneficiaries' requirements regarding the ability to access it whenever and from anywhere. In addition to the appropriateness of needed information, quick electronic response to any request, electronic payment, conducting any transaction completely without going to any PLA office personally, etc.

4- Most beneficiaries have adequate technical resources including computer devices, internet access, scanners, and other applications to use the website of government e-services. (mean=3.72). Another while, most of the respondents affirmed the highest cost of internet access in Palestine.

5- The respondents have **64.3%** readiness towards DX regarding Perceived Information Quality (PIQ). This low-level percentage of readiness indicates to low

level of e-services provided concerning accurate, updated, and easy-to-understand information besides being provided in just Arabic language.

6- The respondents have **65.9%** readiness regarding perceived Legal Framework (PLF), the respondents affirm that the PLA website doesn't contain in a clear way the legislation and laws that support and protect the transaction process electronically. Further, there is no regulatory framework for DX at all published on the website.

   The respondents have **67.1%** of readiness towards DX regarding Perceived Privacy (PP). This means the PLA website doesn't support adequately the beneficiaries' privacy and security of its information. It is weak in the law enacted to regulate services provided through the PLA website.

The Results of the Research Hypotheses are as follows:

The main hypothesis states “There are no statistically significant differences between the means of digital transformation readiness at $\alpha <= 0.05$ due to the demographic variables (scientific qualification, gender, and scientific specialization).”

The results of the Hypothesis investigation:

First Result: There are significant differences in the mean of the computer self-efficacy (CSE) towards DX due to specialty factors. The computer-self efficacy (CSE) has a higher mean (4.4) due to specialty in Human Sciences and Technology and engineering sciences. This means that the respondents who specialized in both sciences are more ready to adapt to the new technology and benefit from all e-services provided by any agency.

Second Result: There are statistically significant differences between the means of digital transformation readiness at $\alpha <= 0.05$ due to the age group variable. The computer-self efficacy (CSE) has a higher mean (over 4) due to the age group between 18-50. That means that this age is more ready and can use the new emergent technology.

Third Result: There are statistically significant differences between the means of digital transformation readiness at $\alpha <= 0.05$ due to the Qualification.

There are significant differences in the mean of the computer-self efficacy (CSE) towards DX due to qualification factor. Computer-self efficacy (CSE) has a higher mean (over 4) due to qualification of Diploma, BA, and Graduate study. That means that these qualifications improve the readiness for DX.

As a result, as seen in the hypotheses finding there is just one factor affected by the demographic variables, which is Computer-self efficacy (CSE). That indicates that the other factors are affected by the perception of the beneficiaries based on the benefits one can gain from the PLA website regardless of any human factors of the beneficiaries.

5.5 Implications for Future Practices

The findings of this study have significant managerial implications for PLA policymakers, government agencies, and system developers who are working on developing a digital government strategy and want to adopt the DX project.

Furthermore, the main outputs of the study were the identified key factors that are likely to measure the readiness of PLA as an organization and the beneficiaries of its services regarding the DX initiative, this research presents a practical and communicable checklist of cultural, social, political, and technological factors, which are seamlessly integrated and used to measure the beneficiaries' perceptions. Besides the

organizational, technological, legislation, and managerial factors which measure the readiness of PLA. That is considered a cornerstone for any potential e-government project.

The researcher suggests that the PLA chairman and the general directors have to develop, adopt, and implement a clear DX strategic plan, initiatives, and policies to support the gradual and successful implementation of the DX process and to allocate sufficient budgets for this because the DX acts an essential role in achieving PLA strategic goals.

The researcher suggests that there is a necessity to take advantage of the emergent new technology and development in the IT sector in reengineering the process of the procedures and building a new model of PLA basic work, in addition, to enhancing the transaction with beneficiaries. Especially considering the increasing utilization of technical devices and access to the internet in Palestine.

The PLA management ought to improve capacity building by conducting training programs and courses for various administrative levels for the ability to work with information and communication technology. Besides, they must adopt a corporate culture embracing transformation and collaboration.

The necessity for the PLA to apply the most recent and developed IT tools and technologies is due to the importance of the DX in facilitating their work and increasing their efficiency and effectiveness, especially concerning the advanced technology that has been observed in the telecommunications sector. Besides, the PLA must restructure the current job taking into consideration added new departments regarding DX requirements to seamless graduation and efficient implementation of DX.

As a result, PLA must approach the following steps to transform into DX:

Firstly: Analyze the External and Internal Pressure to Change: by analyzing how the drivers of DX impact it, currently and in the future to build a solid foundation for DX.

Secondly: Understanding the Current State of Digital Transformation in the PLA: by analyzing the current level of digital services provided to the beneficiaries taking into consideration the results of this study that indicate to main issues regarding the level of readiness in addition to a spotlight on strength and weakness points.

Thirdly: Evaluating the Areas of Improvement: PLA conducts a gap analysis between the current situation and the desired DX. The PLA's understanding therefore where it needs to change and respond to beneficiaries' desires.

Fourthly: Implementation of Changes: PLA must implement the changes and ensure that the digital transformation actions are proceeding into correct direction. In addition, executives ensure that their actions to drive the change are sufficient.

5.6 Recommendations for decision makers at the PLA and MITIT

Based on the results of this study, The researcher recommends decision-makers in the PLA and the MITIT with the following:

1- The PLA has to support the website's ability to contain clear transaction procedures, availability of other agencies' links, announcements, and news of the PLA works.
2- Improve the PLA website's functionality, accessibility, and responsiveness to beneficiaries' requests. In addition, improves the accuracy of data and keeps it updated.
3- Support multi-language for the PLA website contents

4- Improving the collaboration and coordination between relevant authorities, including government agencies, to improve the efficiency and effectiveness in processing and analyzing operations.
5- Facing potential challenges and opportunities through strong partnerships with the private sector and donors in addition to academic institutions and supporting the exchange of ideas, solutions, knowledge, and innovation.
6- Developing clear knowledge management processes and tools to ensure easy and flexible storage and retrieval of information, which will lead to better and faster decisions and thus achieve the necessary improvements and innovative value-added services and solutions.
7- Improving the skills and knowledge of the employees in IT issues, DX and public e-services requirements.
8- On the other hand, the researcher recommends adopting a comprehensive approach, with a clear vision and strategy, to overcome and control the potential obstacles and challenges of digital transformation.

5.7 Recommendations for Future Research

Although lacking of the researches regarding DX readiness in Palestinian context. Thus, the researcher suggests conducting further studies to investigate the readiness toward DX in other public organizations as well as the private sector. In addition, Future research may be designed and conducted to examine the influence of DX on PLA and other public sectors such as health, education, economics, and agriculture sectors. Furthermore, addressing the potential challenges that may hinder the developing and implementation DX as well.

On the other hand, this study used questionnaires and interview tools to collect data, which is considered an important step to avoid bias and develop a better understanding. Finally, the main contribution of this study is adopting the dimensions of DX readiness at the organization level as well as the citizen's level. These dimensions are extracted from many models adopted by significant studies all over the world. These models include DGRA (implemented in the land sector in many countries) and the TAM model and its delivered versions. (TAM 2, TAM 3). However, it would be useful to conduct further studies to identify further readiness dimensions toward DX in a local context, which improves the strategic planning process and successful implementation of DX initiatives.

5.8 The limitations of the study

It must be recognized that this study is limited to one of the public sector institutions. Thus, it is bringing questions about the ability to generalize the findings for other local institutions even private or semi-private in Palestine as potential differences may exist between public and private sectors.

In addition, this study faces the following limitations:

1- The topic's novelty and the limited Palestinian studies on similar topics.
2- The determined time plan was not sufficient to complete the research.
3- The serious responses of the beneficiaries on the questionnaires represented a big challenge.

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الملخص

اصبح التحول الرقمي خيارا استراتيجيا للحكومات التي تسعى باستمرار الى تحسين خدماتها وكفاءة اعمالها.وضمان رضا المواطنين المستفيدين من خدماتها. وعلى الرغم من التطور التكنولوجي الهائل في السنوات القليلة الماضية والتي زادت توقعات المواطنين فيما يتعلق بالخدمات المقدمة لهم، الا ان الطرق المثلى لتبني التكنولوجيا الحديثة وتطبيقها بنجاح لا تزال محل اختبار .

تبنت الحكومة الفلسطينية خيار التحول الرقمي في خدماتها في 2012، حيث سعت من خلال هذا التحول الى استبدال خدماتها التقليدية بخدمات الكترونية.وفي هذا1 الصدد ، تسعى هذه الدراسة الاجابه عن السؤال الاكثر الحاحا و هو: ما مدى استعداد سلطة الاراضي كمؤسسة حكومية للتحول الرقمي؟ حيث عمدت هذه الدراسة الى استخدام نموذجيين عالميين لدراسة مدى الاستعداد للتحول الرقمي . جرى تطبيق هذان النموذجين في دول عدة مثل السينيغال واندونيسيا ولبنان، هذان النموذجين هما DGRA and TAM. حيث يستخدم DGRA لقياس مدى جاهزية المؤسسات الحكومية وغيرها للتحول الرقمي وذلك بدراسة الابعاد التي جاء بها ، وهي رؤية القيادة، الاطار القانوني لعملية التحول الرقمي، ادماج المواطنين في العملية، البنية التحتية التكنولوجية، المعارف والمهارات التقنية، هيكلية المؤسسة، وغيرها من المحاور .تم تكوين اسئلة المقابلات بناءا على هذا النموذج . وتم اجراء المقابلات للموظفين الخبراء في سلطة الاراضي ووزارة الاتصالات الفلسطينية كون عليها مسؤولية كبيرة في التحول الرقمي في اي مؤسسة حكومية فلسطينية. بلغ عدد الموظفي الذين تمت مقابلتهم 20 موظفا من كلتا المؤسستين.

اما نموذج TAM، فهو يتطرق الى مدى استعداد المواطنين للتحول الرقمي والاستفادة من الخدمات الحكومية الالكترونية، حيث ركز هذا النموذج على سهول استخدام الخدمات الالكترونية ومدى الاستفادة منها، وتم اشتقاق العديد من المحاور من خلال هذا النموذج وتم اعداد استبيان بالاسئلة باستخدام Google Form. تم توزيع الاستبيان عن طريق السوشيال ميديا و الواتس اب. وذلك لمراجعي سلطة الاراضي والذين تم اخذ ارقام جوالاتهم من موظفي خدمات الجمهور في دائرة رام الله. تم اختيار دائرة رام الله بناءا على قرار اتخذته سلطة الاراضي بتجربة خدماتها الالكترونية في هذه الدائرة ومن ثم التعديل والتعميم اذا امكن على باقي الدوائر.حيث بلغت العينة 152 استبيان وتم جمع الاجابات وتحليلها باستخدام برنامج SPSS.

تشير نتائج الدراسة الحالية الى ان التحول الرقمي في سلطة الاراضي يحتاج الى تغيير جذري وجهود كبيرة حتى يمكن تطبيقه، وان سلطة الاراضي كجهة حكومية تواجه العديد من المعيقات في هذا الصدد على العديد من المستويات مثل: عدم وجود البنية التحتية الملائمة، عدم وجود فهم كافي لمفهوم التحول الرقمي، ضعف الامكانيات المالية والبشرية، عدم وجود خطة واضحة للتحول الرقمي، الهيكلية الحالية ايضا لا تدعم التحول الرقمي .اما من حيث استعداد المواطنين فان النتائج تشير الى وجود استعداد متوسط لديهم. وفي هذا الصدد توصي الدراسة بتعميم فهم التحول الرقمي بين الموظفين والجمهور المستفيد، تنفيذ تدريبات لزيادة المعارف والوعي التقني للموظفين، تركيز اهتمام اصحاب القرار على هذا التوجه ورصد الموازنات لهذا الغرض.
بالاضافة الى تعزيز التعاون مع المؤسسات الشريكة للاستفادة من الخبرات وتوحيد وتضافر الجهود لتحقيق النتائج المرجوة من عملية التحول الرقمي.
بالاضافة الى ماسبق، تعتبر هذه الدراسة بمثابة إطار ومرجعية يمكن الاعتماد عليها لتطوير خطة التحول الرقمي في المؤسسات الحكومية، كما تشير الدراسة ايضا الى ان التحول الرقمي خيار اجباري في الوقت الراهن وعلى الحكومة المضي قدما في تطبيقه بالرغم من وجود العديد من التحديات والصعوبات التي ستواجهها في هذا الاتجاه.