

# Sheffield Hallam University

*Understanding the role of service integration in e-government implementation in Jordan*

AS'AD, Asa'd Mustafa Abedelqader

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**Understanding the role of service integration in e-government  
implementation in Jordan**

*Asa'd Mustafa Abedelqader As'ad*

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for the degree of Doctor of Philosophy**

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## **Abstract**

The general aim of this study is understanding the role of service integration in e-government implementation in Jordan as a developing country. Mixed method approach was selected to achieve this aim through construction and validation of the proposed research model using semi-structured interviews as a qualitative research method and questionnaires as a quantitative research method.

The main contribution of this study is developing a model towards understanding the role of service integration in e-government implementation in Jordan. This model is based on studying and analysing the critical factors affecting e-government service integration from the perspectives of providers and users of e-government services. Those factors are divided into managerial, cultural, social, political, legal, technological, and economic factors.

The construction of our model took into consideration the overall objectives, benefits and challenges of e-government mentioned in the literature, as well as an original contribution regarding the evaluation of current situation of service integration in Jordan. This is a significant addition to the literature which is lacking empirical investigation considering service integration in general, and within the context of Jordan in particular.

In this study, the analysis process is done using Statistical Package for the Social Sciences (SPSS) to examine the attitudes of respondents towards the role of service integration and the critical factors affecting that role, in addition to the other statistical analysis such as analysis of Means, Medians, Standard deviation, Chi squared and Mann Whitney U test.

Investigating the attitude of respondents revealed an agreement between providers and users of e-government services regarding the critical factors affecting the role of service integration in e-government implementation in Jordan. They see neutral impacts of current situation, legal and technological factors on the role of service integration in e-government implementation in Jordan. However, they agree that managerial, social, and political factors have significant impacts while

cultural and economic factors have insignificant impacts on the role of service integration in e-government implementation in Jordan.

Based on the results of the analysis, this study suggests a set of recommendations in order to reach the highest level of e-government maturity in Jordan, namely the e-government service integration.

## **Dedication**

I wholeheartedly dedicate this thesis to my dearest wife, Randa who provided all possible means of help and support to complete my research. She took care of everything while I was busy writing up my thesis and we discussed together the work of this research. I am totally sure that this dream would have never become reality without her significant contribution and continuous support. She is indeed a gift from the heaven.

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I would also like to acknowledge my friends and colleagues in the United Kingdom and Jordan as well as the experts, reviewers and participants in the survey for their significant contribution in this study.

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## Thesis Structure

This thesis is divided into nine chapters as follows:

Chapter 1 (Introduction): Addresses the research overview, the research aims and objectives, the research questions, the research contribution to knowledge and the research design.

Chapter 2 (Literature Review): Establishes the conceptual context and theoretical foundation towards understanding the role of service integration in e-government implementation in Jordan by reviewing existing research for main critical issues: e-government, service integration and service integration in e-government implementation in Jordan.

Chapter 3 (Research Methodology): Provides a justification for selecting data collection and analysis methods for quantitative and qualitative data that are used in this study. This study utilizes the use of mixed methodology including semi-structured interviews conducted in the qualitative part of the study to create the research model followed by a large-scale questionnaire conducted in the quantitative part to validate the model.

Chapter 4 (Interviews): Provides a detailed description of a qualitative research method (interviews) that is employed in this study to extract the main factors affecting service integration in e-government implementation in Jordan. These factors are the main constructs of the proposed research model which is a major outcome of the study.

Chapter 5 (Qualitative Findings): Introduces the research model that provides the basis for understanding the role of service integration and identifies the critical factors that play a major role in drawing the current picture of service integration in e-government implementation in Jordan.

Chapter 6 (Questionnaires): Provides a detailed description of a quantitative research method (questionnaires) that is employed in this study to validate the proposed research model. All steps and procedures are described such as formation of questionnaire and creating the questions, reviewing the language and contents of the questionnaire by expert judges, conducting pilot studies, selecting population and samples and collecting the data.

Chapter 7 (Quantitative Results): Presents the analysis of quantitative data collected through questionnaires. A description of the statistical tests applied are provided such as Mean, Medians, Standard Deviation, Chi squared and Mann Whitney U test.

Chapter 8 (Discussion of Findings and Results): Presents discussions and explanations for the findings of qualitative part and the results of quantitative part to achieve the main aim and objectives of the study.

Chapter 9 (Conclusion): Draws a conclusion about the factors affecting the current situation of service integration in e-government implementation in Jordan and discusses the limitations of this study in addition to come up with some recommendations for future research. It also presents a summary of the objectives, activities and main findings of the study, as well as the contribution to knowledge that this study makes.

# Chapter 1: Introduction

## 1.1. Introduction

This work explores one of the most important issues in the domain of e-government; namely the role of service integration in e-government implementation.

In recent decades, the significant advancements in the internet and other tools of information and communication technologies have encouraged governments worldwide to adopt innovative e-government initiatives by exploiting these technologies in order to attain better governments (Kumar et al., 2007; Zhang, Xu and Xiao, 2014).

This is achieved by administering and delivering e-services to citizens, businesses, and others in much more convenient ways which save effort, time and money (Rehman, Esichaikul and Kamal, 2012).

The aim of producing new e-services is to make the communication among all involved stakeholders more effective, efficient, convenient and transparent (Sarpoulaki, Eslami and Saleknia, 2008).

E-government guarantees a wide range of benefits to all stakeholders involved in e-government transactions, but the most noticeable benefit is the delivery of integrated services through a single point of access that is open twenty-four hours a day, seven days a week. This single point of access is known as one stop government which refers to the integration of e-services delivered by different government agencies or through collaborated service providers from private sector (Reffat, 2003; Sirkemaa, 2010).

By definition, there are two essential requirements for one stop government. First, all e-services must be integrated. Second, these e-services must be available and accessible to the users in the most convenient ways that meet their expectations. People are not

required to visit many government offices to obtain a service when they can do it from home by few clicks (Xiong, 2006; Almarabeh and Abu Ali, 2010).

For the purpose of this research, the following definition of service integration can be suggested: The combination of all e-government services provided by all government agencies to all parties involved in e-government activities throughout an official main portal with a single entry point available for everyone from anywhere at any time.

In line with this view, e-government services are the public e-services provided by government agencies (service providers) to the people (service users) over the internet and other electronic channels.

Considering the perspective of providers and the perspective of users at the same time is an important aspect for successfully designing and developing e-government integrated services. Providers of e-government services seek to offer services that match the needs and expectations of the users.

All kinds of government services are considered for integration. In Jordan, potential integrated services can be categorized under the following main areas: communication, economy, education and training, health, industry, labor, natural resources and environment, population and human settlements, tourism and antiquities, transportation (Almaraabeh and Abu Ali, 2009; Al Dahuod et al., 2011).

However, even with promises of e-government to offer numerous benefits to all stakeholders in order to attain a better government, many developing countries including Jordan are still facing significant challenges in developing e-government implementation in general and one stop government in particular. The failure in addressing the challenge of service integration is a strong reason that hinders e-government projects from achieving their goals and objectives (Davies, 2005; Shannak, 2013).

Therefore, the role of service integration in e-government implementation must be clearly analyzed and understood. Finding and analyzing the main factors affecting the role of service integration will assist in developing a model that can turn challenges into opportunities, and improve the current situation of service integration to reach the preferred situation.

Successful e-government implementations seek to fulfill users' needs and meet their expectations by providing information and services at one stop portal in much faster and easier ways without any consideration of the time and place constraints.

Dais et al. (2008) argued that integrated services require integrated information systems where governments will not be able to improve e-services without the integration of their local information systems. Ebrahim and Irani (2005) considered integration as a key factor affecting the quality of services provided by governments, and Goldkuhl (2008) argued that integration is one of the most important issues facing e-government.

E-government implementation goes through different stages of growth from the immature to mature. The first stage is publishing, where governments provide information to citizens through static web pages (one-way communication); the second stage is transaction where government exchanges information with citizens through dynamic web pages (two-way communication); and the final stage is integration where all information and services are available online at one stop portal.

Providing integrated services to citizens, businesses, and other stakeholders in a single stop is a big opportunity for governments to advance their services' efficiency and effectiveness, and improve the quality of service delivery to meet the demands of public.

The focus of this research is government to citizens (G2C) interactions where the government seeks to provide citizens with full-integrated services in one stop.

## 1.2. Research aim and objectives

The aim of this research is to analyze the service integration in e-government implementation in Jordan by identifying the factors affecting its current state in order to provide a set of recommendations for improving.

In order to achieve this aim, the following specific objectives are addressed:

1. Investigate the importance of service integration in e-government implementation and assess the current situation in Jordan.

This objective is addressed by presenting the motive for applying service integration in e-government implementation in Jordan and introducing its objectives, benefits, challenges and maturity level reached. This is done by conducting a comprehensive literature review to identify main factors affecting service integration in e-government implementations. The obtained factors from the literature will be used to form a basis for formulation of a set of questions that will be asked during the next stage of qualitative research in the fieldwork through interviews.

2. Construct a model that illustrates the main factors influencing the service integration in e-government implementation in Jordan.

This objective is addressed by developing a model that identifies the critical success factors affecting the current situation of service integration in e-government implementation in Jordan based on the collected data from the fieldwork through the use of interviews as a qualitative research approach. The proposed model is tested, validated and confirmed by the use of large scale questionnaires as a quantitative research approach.

3. Recommend a set of improvements on the service integration in e-government implementation in Jordan as an example of a developing country.

This objective is addressed by putting forward a set of recommendations and suggestions that help in developing the status of service integration in e-government implementation in Jordan. These recommendations and suggestions resulted from the analysis of the collected data from the fieldwork through interviews and questionnaires.

### 1.3. Research questions

To achieve the overall aim and objectives of this study, the following research questions have been formulated:

RQ1: What is the current situation of service integration in e-government implementation in Jordan?

RQ2: What are the major critical factors influencing the service integration in e-government implementation in Jordan?

RQ3: What are the recommendations and improvements that can be suggested to transfer service integration in e-government implementation in Jordan from the current situation into a preferred situation?

### 1.4. Research contribution

Based on theoretical and empirical investigation of the research topic, this research contributes to the existing body of knowledge and provides guidance for future research in the domain of e-government especially in the service integration area.

According to the literature review, this is the first research that addresses the service integration in e-government implementation in Jordan. Existing studies focus on the adoption and early stages of e-government implementation in Jordan (Elsheikh, Cullen and Hobbs, 2008; Alomari, Sandhu and Woods, 2010; Abu Shanab and Al Azzam,

2012; Alomari, Woods and Sandhu, 2012, Qutaishat, 2012; Alawneh, Al Refai, and Batiha, 2013; Al Hujran, Al Oudat and Al Tarawneh, 2013; Abu Shanab, 2014; Al Hujran et al., 2015).

This study considers the perspectives of two types of stakeholders at the same time. It investigates the perspectives of both providers and users of e-government services in Jordan, unlike other studies that considers only the perspective of one stakeholder about the subject (Al Shihi, 2006; Al Shafi and Weerakkody, 2007; Al Hujran and Chatfield, 2008; Belwal and Al Zoubi, 2008; Venkatesh, Sykes and Xiaojun, 2011; Rehman, Esichaikul and Kamal, 2012; Ahmed, Jouni and Markku, 2012).

The strength of this work relies on the fact that it combines the findings of literature review with the findings from the fieldwork and takes both perspectives of providers and users in consideration.

However, the main contribution of this work is proposing a model that analyzes the factors affecting service integration in e-government implementation in Jordan. Our model is based on a set of core constructs influencing the current situation of service integration. They are divided into managerial, cultural, social, political, legal, technological, and economic factors.

As a result, recommendations for e-government decision makers are proposed. This model can be generalized to other developing countries with similar conditions.

### 1.5. Research design

To achieve the research objectives and to answer the main research questions, this research goes through a series of steps and procedures including a comprehensive literature review, a set of qualitative interviews, development of the research model,

two pilot studies, a quantitative large-scale questionnaire, interpretation of research findings, model confirmation and a set of recommendations for improvement.

Since the main involved groups in G2C interactions are citizens and government employees, this research investigated the role of service integration in e-government implementation from two perspectives. The first is the perspective of users or citizens who benefit from e-government services and the second is the perspective of providers or employees of the government agencies that are responsible for the introduction and deployment of integrated services.

The methodology employed in this research uses a mixed method approach through the use of interviews in the qualitative part which is suitable for developing a model for understanding the role of service integration in e-government implementation in Jordan followed by the use of questionnaires in the quantitative part which is suitable for validating the proposed research model.

Once the quantitative data is collected from both users and providers, the analysis process is carried out to examine the constructs of the research model and to answer the main research questions using various statistical techniques such as analysis of Mean, Median, Chi squared and Mann Whitney U Test.

The importance of these statistical tests is to extract the useful data that will be used for interpreting and explaining the factors affecting service integration in e-government implementation in Jordan.

The main phases of the research that are conducted in this study:

Phase 1. Reviewing the literature:

This research begins with a comprehensive literature review about e-government, service integration and service integration in the context of Jordan in order to identify the research theoretical background and to gain essential knowledge about the results and findings of other studies that are closely related to our research topic.

### Phase 2. Conducting the interviews:

A set of open-ended questions regarding service integration in e-government implementation in Jordan have been formulated based on suggested research questions and the results of exploring previous studies in the literature.

In order to enrich the findings of the literature and to develop the research model, fifteen experts who are aware of project planning and development of e-government services in Jordan were selected from public and private sectors to be interviewed and to answer the questions.

The interviews helped answering the research main questions, identified earlier in this chapter, regarding critical factors affecting service integration in e-government implementation and assessing the current situation of service integration in Jordan.

It also helped identifying users' and providers' perceptions of the e-government integrated services and the similarities and differences between them.

### Phase 3. Developing the research model:

Based on the findings from the literature and the findings from initial interviews, a set of major critical factors that might affect the role of service integration in e-government implementation in Jordan is introduced. These critical factors are classified into managerial, cultural, social, political, legal, technological, and economic.

Therefore, we constructed a model that identifies the critical factors controlling the role of service integration in Jordanian e-government and recognize the double-view perspective of providers and users regarding these factors.

Our model supports examining the similarities and differences between users' perception and providers' perception about e-government service integration.

#### Phase 4. Formulating the survey questions and designing the questionnaire:

A quantitative research approach is applied using a questionnaire to test and validate the constructs of the proposed research model. The questions were formulated and translated from English to Arabic which is the native language of the targeted respondents.

After that, the first draft of the questionnaire was reviewed by seventeen experts and specialists in relevant areas to be ready for the conducting the pilot studies.

#### Phase 5. Conducting the first pilot study:

A paper-based pilot questionnaire is distributed on a sample of forty participants in order to test all constructs of the study to spot any errors or difficulties that might hinder the research process and collect feedback from participants about the needed time to complete, clarity of questions, and any other comments they might have. The revised questionnaire is used for conducting the second pilot study in phase 6.

#### Phase 6. Conducting the second pilot study:

A web-based pilot questionnaire is conducted on a sample of forty participants in order to assess and refine the study measurements using a variety of statistical tests. The reliability of the constructs was tested statistically using Cronbach's alpha and the validity was confirmed by calculating the square root of Cronbach's alpha.

#### Phase 7. Conducting a large-scale survey questionnaire:

After distributing, collecting, analyzing the pilot questionnaires and modifying some questions, the main survey was conducted on a large scale of providers and users of e-government services. The research model was confirmed based on the analysis of the data obtained from the main questionnaire.

The perceptions of participants regarding the benefits, challenges, and progress of service integration in e-government implementation and the development of the integrated e-services have been taken into consideration. After distributing the

questionnaire to the participants, a total of 642 responses are collected; 90 from providers and 552 from users.

Phase 8. Discussing and interpreting the results:

Findings of interviews' analysis from qualitative part of the study and results of questionnaires analysis from quantitative part of the study are discussed and compared in order to explain them within the research context regarding the role of service integration in e-government implementation in Jordan.

Phase 9. Confirming the proposed model of service integration in e-government implementation in Jordan:

Based on the discussions and outcomes from the previous steps, any required amendments and enhancements to the proposed research model are considered and carried out in order to reach the final version of the model.

Phase 10. Suggesting a set of recommendations for improving service integration:

As a final step, a number of suggestions and recommendations to fully understand and improve the role of service integration in e-government implementation in Jordan are presented.

## 1.6. Summary

This chapter introduced an overview for the research topic: understanding the role of service integration in e-government implementation in Jordan. It also addressed the research aim and objectives, research questions, research contributions and research design.

In the next chapter, a literature review is provided to establish the conceptual context and theoretical foundation towards understanding the role of service integration in e-government implementation in Jordan.

## **Chapter 2: Literature Review**

### **2.1. Introduction**

This chapter presents a conceptual context and theoretical foundation of existing research towards understanding the role of service integration in e-government implementation in Jordan. The relevant literature for main research areas was reviewed including e-government, service integration and service integration in e-government implementation in the context of Jordan.

In the current literature, a significant number of studies have investigated these issues using various theories and models to explain how governments perceive, adopt and apply service integration in e-government implementation.

Section 2.2 addresses the topic of e-government. Section 2.3 addresses the topic of service integration. Section 3.4 addresses service integration in e-government implementation in Jordan.

### **2.2. E-government**

In the last few decades, the revolution in information and communication technologies especially the internet has inspired governments around the world to exploit a huge number of potential benefits for using these new technologies and innovations through adopting new initiatives including e-government (Kumar et al., 2007; Zhang, Xu and Xiao, 2014), which will make the interaction between the government and all involved stakeholders more user friendly, transparent, reliable, affordable, faster and convenient. It will save effort, time and money (Sarpoulaki et al., 2008; Rehman, Esichaikul and Kamal, 2012).

There are many definitions of e-government in the literature. Some definitions focus only on one or two elements of e-government. Others are more comprehensive and include several elements of e-government.

UNESCO (2016) defines e-government as the use of information and communication technologies by government agencies to deliver information and services, draw policies, make decisions, improve productivity, enhance accountability, increase transparency and encourage public participations in government activities.

UNESCO definition considers multi-view perspective and takes more dimensions of e-government into account such as managerial, political and technological.

A more comprehensive definition is the one that describes e-government as the use of information technologies including wide area networks, internet, and mobile computing by several government organizations to transform relations with citizens, businesses, and other government agencies (World Bank, 2016).

By analyzing the definitions in the literature, a set of characteristics of the e-government can be extracted:

- It is a transformational process in governments from the old traditional procedures into new electronic procedures.
- It involves the automation or computerization of existing paper-based procedures using information and communication technologies.
- It focuses on the use of internet as a primary tool of information and communication technologies to support e-government activities.
- It includes all governmental operations conducted in different governmental agencies.
- It includes all governmental services provided to different types of stakeholders such as citizens, businesses and other governmental agencies.
- It can provide information and services online from any place at any time.

- It can provide more convenient access to government information and services.
- It can improve information and service delivery through time saving and cost reduction.
- It can provide new ways to enhance relationships and increase positive interactions between governments and their citizens.
- It can improve accountability, transparency and citizen empowerment by allowing wider participation in government policy shaping and decision making process.

The impacts of e-government are numerous and touch all aspects of people's life including managerial, cultural, social, political, legal, technological and economic. More details on such aspects and their relation to the topic of this study are presented in chapter five.

The three main types of stakeholders involved in e-government interactions are citizens, businesses and governments themselves (Almarabeh and Abu Ali, 2010).

E-government uses tools of information and communication technologies to connect various stakeholders and to conduct processes with the goal of achieving better government. Thus, the transactions in e-government are classified under the following four types (Yildiz, 2007; Al Onizat, Al Oqeili and Hijazi, 2013; Vasiliki, 2017):

1) Government-to-Government (G2G):

Aims to manage relationships and administer connections between various government agencies to behave as one department by allowing them to share information and resources in order to create cooperation, coordination and transparency. Thus, they will be able to interact with citizens and businesses effectively. Examples of G2G include: inter-agency payments, procurement, and standardized forms.

## 2) Government-to-Business (G2B):

Aims to manage relationships with businesses and private sector companies by providing them with all information and services they need from any government agency in order to contribute to the development of national economy which will in turn allow a country to keep in line with global economies. Examples of G2B include: start-up a new company, taxation, and licensing.

## 3) Government-to-Citizen (G2C):

Aims to manage relationships and interactions with the citizens by providing them with all information and services they need from any government agency in order to build the trust between government and citizens and gain their satisfaction. Examples of G2C include: paying bills, updating citizens' information and downloading official documents.

## 4) Government-to-Employee (G2E):

Aims to manage relationships and interactions with government employees by improving all intra-government transactions and processes. Examples of G2E include: e-payroll and e-training. Figure 2.1 shows the types of transactions between stakeholders in e-government.

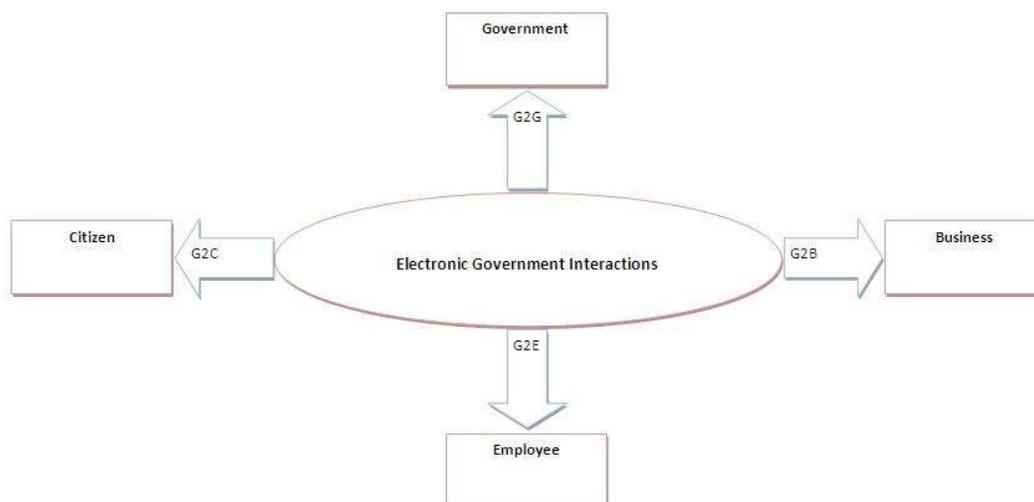


Fig.2.1. Types of transactions between stakeholders in e-government.

E-government has a list of goals and objectives that must be realized in order to be successful. These goals and objectives include renovating the form of government into electronic shape instead of the traditional shape (Holzer and Kim, 2008), supporting economic policy and transformation of the administrations (Almarabeh and Abu Ali, 2010), improving relationships between government and other stakeholders (Millard, 2003), providing value-added services to all involved stakeholders in government activities, enhancing interactions with businesses and industries, improving efficiency of government management, supporting citizen empowerment in various forms such as accessing information and participating in decision-making process (Al Qatawna et al., 2014).

By achieving the aforementioned goals and objectives, governments will have the ability to provide all involved stakeholders in e-government transactions with a significant number of benefits that includes delivering e-government integrated services in one stop portal, bridging the digital divide, rebuilding government-citizen relationship, increasing economic development, creating more participative form of government (Reynolds and Regio, 2014), providing more accessible, more convenient, more responsive and more cost effective services, making governments more open, more accountable, more inclusive and more superior in leading their communities, promoting local economy vitality through a modern infrastructure for information and communication technologies, developing a highly skilled workforce and improving employability of the citizens (Ferguson, 2005), corruption reduction, transparency improvement, convenience maximization, revenue growth enhancement, and cost lessening (Al Qatawna et al., 2014).

However, the accomplishment of e-government objectives and its potential benefits is not trivial. A set of serious obstacles and challenges must be overcome to achieve successful implementation of e-government.

According to InfoDev (2002) and Odat (2012), the main obstacles and challenges are: The infrastructure development, law, digital divide, e-literacy, accessibility, trust, privacy, security, transparency, interoperability, record management, permanent availability, education, marketing, public-private competition, public-private collaboration, workforce shortage, cost, benchmarking. These challenges can be categorized under the following areas: information and data, technical and technological, organizational and managerial, legal and regulatory, institutional and environmental (Eynon and Dutton, 2007; UNESCO, 2016), financial and economic (Ebrahim and Irani, 2005; Lam, 2005) and service integration (Goldkuh, 2008; Btoush et al., 2009; Shannak, 2013).

It can be seen from the above discussion that successful e-government is an implementation that has the ability to meet the overall objectives of e-government on one hand and utilize its promising benefits on the other. At the same time, successful e-government has the ability to overcome all kinds of obstacles and challenges that might hinder its progress towards achieving its main goals and objectives.

Al Qatawna et al. (2014) points out that governments lag behind when compared to businesses in regard of e-services due to a number of major barriers that hinder the development of e-government services to be fully integrated. These barriers can be classified into organizational, policy, strategic, technological, legal, human factors, volume of online users, security threats, and online payment methods.

### 2.3. Service integration

In order to successfully implement service integration, e-government projects go through different phases of growth from the basic or immature into advanced or mature stage.

The first phase is a one-way communication or online publishing of government information to the public about available services over static websites. The second phase is a two-way communication or online transaction where government interacts with public to exchange information over dynamic websites. The final stage is integration where all information and services are available online at a one stop portal which is accessible anytime from anywhere by anyone (Al-Zoubi, Sam and Eam, 2011; Jordanian e-government website, 2016).

Today, delivery of integrated services to all stakeholders in one stop can be seen as a great opportunity for governments to improve their services' efficiency and effectiveness, and advance the quality of service delivery to meet the expectations of public.

The term *service integration* is composed of two parts: service and integration. In the context of this research, a service refers to a set of actions that are performed by any government agency in response to any request from any involved stakeholder in government transaction including other government agencies, businesses or citizens. These services can be traditional and provided through conventional channels such as public counters and telephones, or can be electronic and provided by electronic channels such as mobile phones and internet.

Many definitions for *electronic service* (e-service) have been provided by many researchers in the field of e-government (Buckley, 2003; Rais and Nazariah, 2003; Lofstedt, 2012). For example, Rowley (2006:339) defines it as: "Deeds, efforts or performances whose delivery is mediated by information technology. Such e-services include the service element of e-tailing, customer support, and service delivery".

This definition emphasizes the information and communication technologies used as tools to provide services to the people. It also highlights two involved stakeholders in e-services: service providers and service users.

In the context of this study, e-government services are the public e-services provided by government agencies (service providers) to the people (service users) over the internet and other electronic channels.

According to the Tech Target Group (2014), the word 'integration' has many definitions based on the field or context addresses it whether it is sociology, economy, biology, mathematics, electronics, engineering or others, but generally it refers to the process of forming a whole from combining a group of parts together to work in harmony and consistency.

To provide more efficient and effective e-services by government agencies, integration of services is critically required among different levels in different government agencies that works together in harmony and consistency to deliver integrated services that meet the needs and demands of the users (Klischewski and Scholl, 2008).

In other words, service integration is a method to achieve more efficiency, effectiveness and competitiveness among all collaborative agencies where government agencies are not exceptions (Wainwright and Waring, 2004).

Huang and Bwoma (2003) define service integration as the most sophisticated level of e-government in which government services are integrated together. The required services are accessible to all people involved in e-government activities irrespective of the government agencies that are responsible for providing them.

Another definition to explain the concept of service integration in e-government is presented by Goldkuh (2008) who defines service integration as the collaboration of different government agencies to produce a combination of different e-government services to become one unified service that will be delivered to users in a seamless manner at one-stop portal which is a single entry point that allows individual users to pick their customized services from a full list of available services based on their personal preferences.

The aforementioned definitions of service integration highlight many key issues that need to be taken into consideration in order to guarantee an efficient, an effective, and a competitive integration of e-government services.

Major issues in this regard include availability, accessibility, personalization and customization, cooperation and coordination, and one stop portal (Reffat, 2003). Moreover, association of existing systems and databases in government agencies is highly required in addition to a certain level of intra-departmental collaboration and harmonization.

The importance of service integration can be realized by removing boundaries between collaborating and cooperating agencies to provide integrated services to the public. However, service integration as a process can take place within a single government agency provides multiple services or among separate government agencies provide joint services (Hassett and Austin, 1997).

In line with this view, taking the main characteristics of service integration mentioned above in consideration, the following definition of service integration can be suggested:

The combination of all e-government services provided by all government agencies to all stakeholders involved in e-government activities throughout an official main portal with a single entry point available for everyone from anywhere at any time.

This definition reveals the following three main components: an integrated service provider, an integrated service receiver and a channel to deliver integrated services. As a result, all services provided by government service providers must be combined together and must be integrated in order to be delivered to government service receivers via e-government one stop portal.

To reach a high level of service integration maturity, an e-government implementation follows one of maturity models that show the stages of e-government's growth from the immature to the mature. According to Btoush et al. (2008) and As'ad et al. (2016b),

here are examples of such models that are proposed by researchers and practitioners in the field of e-government: Gartner (2000), United Nations (2000), Deloitte (2001), Howard (2001), Layne and Lee (2001), World Bank (2002), Chandler and Emanuels (2002), Moon (2002), National Audit Office (2002), Asia Pacific (2002), Accenture (2003), West (2004), Siau and Long (2005), Public Process Rebuilding (2006), Six I (2008), Klievink and Janssen (2009).

These models can be seen as a road map that helps in implementing e-services efficiently and effectively on one hand and in evaluating the overall progress of e-government projects on the other (Btoush et al., 2008). Table 2.1 which was presented and discussed by As'ad et al. (2016b) shows examples of the most well-known maturity models where the first column is the name of the model, the second column is the number of stages or phases specified by each model to complete e-government lifecycle and the third column is the year of introduction.

Table 2.1. Maturity models

<b>Model Name</b>	<b>No. of Stages</b>	<b>Year</b>
<b>World Bank</b>	<b>3</b>	<b>2002</b>
<b>Howard</b>	<b>3</b>	<b>2001</b>
<b>Gartner</b>	<b>4</b>	<b>2000</b>
<b>Layne and Lee</b>	<b>4</b>	<b>2001</b>
<b>West</b>	<b>4</b>	<b>2004</b>
<b>Chandler and Emanuels</b>	<b>4</b>	<b>2002</b>
<b>Public Process Rebuilding (PPR)</b>	<b>4</b>	<b>2006</b>
<b>Siau and Long</b>	<b>4</b>	<b>2005</b>
<b>Moon</b>	<b>5</b>	<b>2002</b>
<b>Accenture</b>	<b>5</b>	<b>2003</b>
<b>United Nations (UN)</b>	<b>5</b>	<b>2001</b>
<b>National Audit Office (NAO)</b>	<b>5</b>	<b>2002</b>
<b>Klievink and Janssen</b>	<b>5</b>	<b>2009</b>
<b>Deloitte</b>	<b>6</b>	<b>2001</b>
<b>Asia Pacific</b>	<b>6</b>	<b>2002</b>
<b>6I</b>	<b>6</b>	<b>2008</b>

The models that are introduced by Howard in 2001 and World Bank in 2002 have three phases only: publishing, transaction and integration. Those three phases are the core phases of e-government maturity. However, many other researchers have expanded those main phases into more sub phases. For example, Layne and Lee (2001), Gartner (2000), West (2004), Chandler and Emanuels (2002), Public Process Rebuilding (2006), and Siau and Long (2005) have introduced maturity models with four stages. On the other hand, United Nations (2000), Moon (2002), Accenture (2003), National Audit Office (2002) and Klievink and Janssen (2009) have introduced five stages models. Deloitte (2001), Asia Pacific (2002) and Six I (2008) have introduced six stages models. Despite the fact that the aforementioned maturity models consist of different numbers of stages to reach an advanced level of e-government, it can be noticed that the ultimate goal of all models is the integration of government services provided by different government agencies for different functions at different levels of the government system (Andersen and Henriksen, 2006; NOIE, 2014).

It is clear that service integration is a critical factor to reach an advanced stage of e-government and achieve its overall goals and objectives. Therefore, the objectives of e-government will be reached only when full service integration is accomplished.

It is important to give more attention to the role of service integration when making plans and decisions regarding e-government strategies and implementations. E-government policy-makers need to consider the importance of service integration through understanding its multifaceted role in e-government and also need to consider the overall objectives, benefits, challenges and maturity stages of e-government to highlight the location of service integration on e-government map and how it can support the overall development of e-government projects.

In an attempt to explore the role of service integration in e-government and to understand its cycle, we come up with a diagram shown in figure 2.2. The service

integration is based on realizing a set of objectives to reach the maturity stage, the drive towards the maturity stage is the potential benefits of the integrated services, but the challenges might impede its progress.

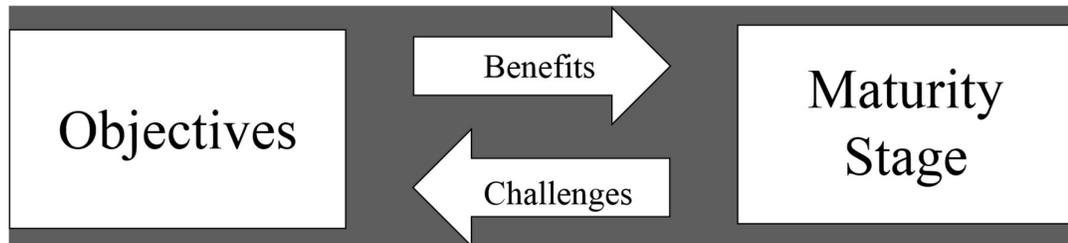


Figure 2.2. Cycle of service integration in e-government implementations.

Most of the previous studies in the literature investigated the role of service integration in e-government implementation from one perspective, either the perspective of providers of e-government services such as Ahmed et al. (2012) and Venkatesh et al. (2011), or the perspective of users of e-government services such as Rehman, Esichaikul and Kamal, (2012) and Al Hujran and Chatfield (2008).

Therefore, considering the perspective of providers and the perspective of users at the same time is an essential requirement for successfully designing and developing the e-government integrated services. Providers of e-government services seek to provide services that match the needs and expectations of the users.

Thus, studies that focused on one perspective and ignored the other were not able to provide sufficient results that could handle a broader picture and fill the gap between the perspectives of providers and users of e-government services.

One of the most interesting aspects of this study is the consideration of both perspectives of providers and users of e-government services. This will help in integrating two perspectives and finding the links and relationships among them to properly design and deliver efficient and effective e-government integrated services that meet users' expectations.

As a result of reviewing the literature and previous studies on service integration in e-government implementation, a set of principles for successfully implementing service integration are extracted and a model illustrating those principles is developed. In the context of this study, those principles are called pillars of service integration in e-government implementations.

The first pillar in our model is availability. According to As'ad et al. (2016a), a successful implementation of service integration requires availability of integrated services which refers to the ability of e-government portal to provide designated integrated services at one-stop whenever required to all stakeholders involved in e-government interactions with no need to know the details behind the delivered integrated services or even which government agencies are responsible for providing them.

In line with this view, concepts such as cooperation, collaboration, association and coordination of all governmental agencies responsible for providing integrated services at one stop are key factors to accomplish successful integration of services in e-government implementation.

The second pillar in our model is consistency. To ease and support the development of successful service integration, high levels of consistency between data, information and systems are required. The compatibility of software, hardware and other technologies is another key factor that should be given careful attention during the implementation of e-government service integration. Lack of compatibility results in poor integration between collaborated government agencies working together to produce and deliver e-government integrated services to people.

The third pillar in our model is accessibility of integrated services to all potential users regardless of their level of education or knowledge of the internet and computer skills

(Reffat, 2003). Accessibility is the ability to obtain designated integrated services from anywhere at any time by anyone.

The fourth pillar is security. We can highlight two major security issues: authentication and authorization. Authentication provides tools to verify user's identity by guaranteeing that the user accessing the e-government portal is what or who it claims to be while authorization provides tools to grant or deny a user from accessing all or some information or services on e-government portal.

Authentication and authorization support the idea of privacy and confidentiality by restricting access to user's data and profiles by certain authorities (Business Dictionary Website, 2016).

Successful installation of software, hardware and new technologies that support authentication and authorization is highly required to ensure that the standards of security and privacy are well implemented when e-government services produced in a secure and safe environment. So, government can keep the contents of e-government portal secure over the time and protect all operations conducted to provide e-government services at anytime from anywhere by anyone.

Security and privacy issues need more attention in the environment of e-government where the databases and networks of different government agencies contain confidential government information and personal profiles of the citizens. Failure in overcoming security and privacy issues lead to increase the degree of risks and cause a big delay in deployment of service integration in e-government implementation.

Many issues around security and privacy and how they may affect service integration in e-government implementation have been presented and examined in the literature (Ebrahim and Irani, 2005; Belanger and Crossler, 2011; Acquisti, John and Loewenstein, 2013; Adjerid et al., 2015; Marthews and Tucker, 2017):

- 1) Threats caused by hackers, intruders, viruses, worms, and trojans.

- 2) Securing privacy of confidential and personal data.
- 3) Costly price of security applications and privacy solutions.
- 4) Unauthorized access to government data and information.
- 5) Lack of awareness about potential security threats and risks.
- 6) Lack of advanced tools that approve validity and legality of online transaction.
- 7) Lack of laws and regulations supporting the implementation of security and privacy of e-government services.
- 8) Insufficient hardware and software supporting the implementation of security and privacy of e-government services.
- 9) Absence of risk management skills among the employees involved in e-government transactions.
- 10) Unrestricted access to administration buildings or facilities that contain government servers and computers.

Therefore, it is vital to use innovative security solutions that utilize effective technologies such as digital certificates, biometric tools, digital signature, reliable firewall, up to date anti-spyware software, up to date anti-virus software and advanced encryption techniques. These technologies aim at providing an advanced level of security and privacy in all stages of e-government service integration.

Andersen and Henriksen (2006) highlighted the concept of customization to refer to personalization and individualization of integrated services provided through e-government portal based on users' profiles such as the ability to automatically filling in information and downloading selected forms or documents based on users' preferences. That's why we selected customization as the fifth pillar in our model.

The sixth pillar in our model is reliability. Many researchers give emphasis to it as a critical issue to ensure efficient and effective delivery of integrated services at one stop. Howard (2001) stated reliability without degradation or failure to express the ability of

the e-government portal to consistently perform its functions and offer its services to all kinds of stakeholders when required without degradation or failure.

The seventh pillar is maintainability. It refers to characteristic of design and installation that determines the probability if a failed equipment, machine, or system has the ability to be restored to its normal operable state within a given timeframe based on a set of prescribed practices and procedures. It has two main components: serviceability which is ease of conducting scheduled inspections and servicing, and reparability which is ease of restoring service after collapse or failure (Business Dictionary Website, 2016).

The eighth and last pillar in our model is usability. Codagnone and Undheim (2008) identified usability as one of the main principles for achieving successful service integration. They relied on the idea that it can provide ease, speed, and intuitiveness in operating or using the e-government portal to offer all kinds of integrated services to all users of e-government services. Usability arises from a combination of well thought-out architectural and design factors, and interpreted as user's ability to perform tasks efficiently and effectively with regular efforts (Business Dictionary Website, 2016).

All the aforementioned pillars have significant impacts on the implementation of service integration in e-government and they must be taken into consideration in order to achieve successful service integration.

Figure 2.3 shows the key pillars of service integration in e-government implementation and their related critical factors.

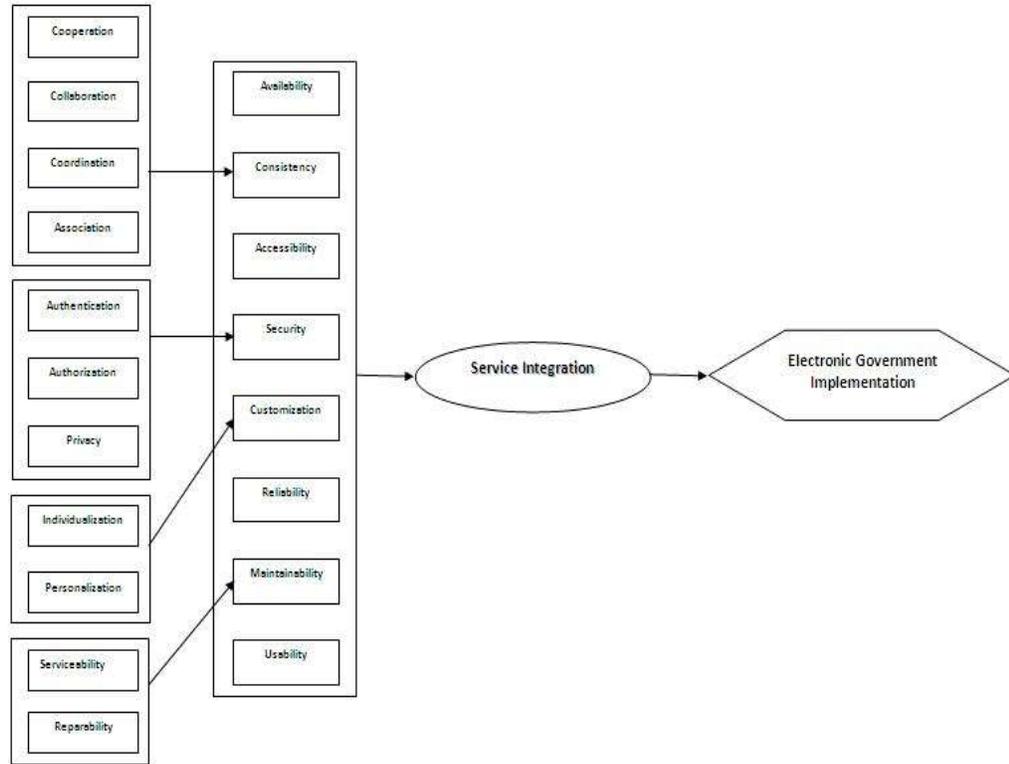


Figure 2.3. Key Pillars of service integration in e-government.

#### 2.4. Service integration in e-government implementation in Jordan

Jordan is a developing country located in a politically unstable area with a centralized place in the Middle East. Bordered by Syria to the north, Iraq to the east, Saudi Arabia to the south and southeast, and Palestine to the west.

The total population of Jordan is 9,768,999 as of Tuesday, October 31, 2017, based on the latest United Nations estimates (Worldometers, 2017). The density of population is concentrated in the center and north of the country.

Arabic is the official language and the use of English is commonly widespread in educated environments. The currency is the Jordanian Dinar (JD) which equals £1.05 in December 2017.

Jordan is classified as one of the lower-middle income countries with limited natural resources, but because the country is rich in qualified human resources, substantial efforts by the government were made to put the country on the world map of information and communication technologies through continuous attempts to label Jordan as a center of information and communication technologies in the region (Joudeh, 2011).

These attempts focus on compensating the lack of natural resources by encouraging local firms and international giant companies to invest in the information and communication technologies sector in Jordan in order to recognize the country as a basis for their work in the Middle East (Al Jaghoub and Westrup, 2003).

His Majesty King Abdullah II emphasized on this when he said that “the vision of Jordan is to become a regional IT leader and an internationally recognized exporter of IT products and services exploiting its core human capital advantages. The key to success is the central role of the private sector, which spearheads the sustained entry of the sector into international markets” (Reach 2.0, 2001, p.2).

To achieve this vision, Ministry of Information and Communication Technology (MoICT) was established to manage and administer the sector of information and communication technologies with the goal of improving the life quality and supporting the socio-economic development in the country (Al Shboul et al., 2014).

Therefore, the strategy of Information and Communication Technology (ICT) in Jordan commenced since the beginning of this century to increase the rank of the country on the global indicators regarding the overall progress in information and communication technologies (Reach 1.0, 2000; Reach 2.0, 2001; Al Jaghoub and Westrup, 2003;).

Responsibilities of MoICT include (MoICT, 2014):

- Manage and administer all innovative projects that are linked to information and communication technologies.

- Provide all kind of support to all government agencies in regard to the deployment and operation of information and communication technologies.
- Supervise the implementation of new information and communication technologies in all government agencies.
- Create and circulate policies of standardization for software, hardware and procedures among all government agencies.
- Improve efficiency, effectiveness, responsiveness and competitiveness of government agencies on the regional and international levels.
- Increase the rank of the country against international indicators in relation to the progress achieved in information and communication technologies.

The mission to achieve the goals and responsibilities of MoICT is to provide support to involved stakeholders in regard to the following key subjects (MoICT, 2014):

- Enhancing the legal and institutional environment for a competitive market that rewards innovation and yields products and services.
- Strengthening and championing the competitive position of the ICT sector domestically, regionally and internationally and attracting local, foreign and direct investments.
- Ensuring that ICT resources are exploited in the most efficient way and expanding community understanding, application and use of ICT to drive for social inclusion and to bridge the digital gap.

From day one, MoICT has started a group of promises initiatives including e-government program to support its vision and mission. E-government program was launched in 2001 with exceptional encouragement of His Majesty King Abdullah II to be "An essential and active participant in the economic and social development through the use of information and communication technology to enable easy access to government information and services for all users regardless of their geographic

location or economic status or professional capacity" (Joudeh, 2011; Almarabeh and Adwan, 2013).

The significant role of service integration to achieve this vision can be clearly identified since the ultimate goal is to provide government information and services from any government agency to all people involved in e-government activities via an official government portal with a single-entry point of access available for everyone from anywhere at any time.

The mission of e-government program is to achieve this vision through managing the change in the government, focusing on the satisfaction of the recipients of services, providing various channels to deliver services using latest technologies, improving knowledge management processes in government agencies, recruiting qualified and skilled staff to implement e-government projects that are easily accepted and adopted from people in Jordan (E-government official website, 2016).

Additionally, the official website of MoICT (2014) specified the following list of goals and objectives for e-government program in Jordan:

- Supporting variations of methods and procedures for service delivery.
- Improving productivity, effectiveness and efficiency of government agencies.
- Enhancing the level of services delivered to all involved stakeholders.
- Increasing the reported Revenue Over Investment (ROI).
- Providing fast and accurate information as requested by users.
- Developing the skills and achievements level of employees and staff in all government agencies.
- Building infrastructure and improving technological environment required to provide services as expected.
- Increasing security of data and privacy of users' information.

The successful implementation of service integration is playing a major role in achieving the vision, mission and objectives of e-government program in Jordan by facilitating all actions and activities needed to support them.

Over the past few years, various government agencies have begun implementing information and communication technologies under the supervision of MoICT and according to its strategy and determined plans in order to be able to provide information and services in faster and easier ways via e-transformation from traditional government into electronic government (Al Shboul et al., 2014).

As a result, various government agencies have launched their own websites over the internet to directly connect users to the local information systems of government agency and to manage users' requests in more responsive, efficient, effective and convenient ways through the official website of that government agency.

Despite all the benefits and services provided to users by different websites of government agencies, one of the most critical challenges that e-government in Jordan need to face in this regard is the integration of various services provided by many local government information systems to make these e-government systems working together in harmony as one unified system.

In an attempt to solve this issue, the first half of the year 2006 has witnessed the foundation and promotion of Jordanian e-government official website to be a portal that combines deferent websites of all local government agencies through one user interface. In other words, e-government portal can be seen as a one system that involves many sub systems working together in a compatible way.

The first phase of building the portal is to make all information about government services available and accessible online. The second phase of the portal is to fully integrate the portal with all websites and information systems of local government agencies, eventually enabling complete transaction between government and users.

Finally, the portal will be a one stop shop for user interaction with all government agencies to provide all users with all kinds of services at anytime from anywhere (MoICT, 2014).

Currently, e-government program has made a significant progress by delivering many online services to the public through e-government portal. Still, the progress regarding service integration through developing e-government portal that would be a single window to provide all stakeholders with all kind of integrated services in one stop from any place at any time, which is the ultimate goal of developing the portal in first place, is still far away (Btoush et al., 2009; Shannak, 2013; Al Qatawna et al., 2014).

By observing the portal and many government agencies websites regularly during different phases of this study, the researcher has noted a number of drawbacks and deficiencies such as:

1. Lack of clear navigation options that easily locate services of interest and explore contents of the website.
2. Lack of index or directory that contains all available services on the website.
3. Lack of tools and options to facilitate search through the website for designated services or specific information.
4. Improper design and format of the website's contents including the font type, size, color and other formatting and styles effects.
5. Irrelevant and large multimedia files such as images, charts, graphics, videos, audios and so on. Many of them are not related and take a lot of time to be opened or downloaded because their big size which is not suitable for internet.
6. Lack of good appearance of webpages especially the main page of the website which might give negative indications and bad impressions about the overall design of the website. For example, no standard themes or templates are applied to all webpages in the same website.

7. Lack of customization and personalization options that can make visiting and navigating the website more convenient to users.
8. Existence of wrong or outdated information on the website. Some government agencies have not updated the contents of the website from their first presence and a few agencies yet have no online presence at all.
9. Existence of serious technical problems and malfunctions that can be seen in many websites that display a message to inform the users that this website is down, under maintenance, or under construction for months.
10. Poor connectivity and bad linkage among webpages in the same website. For example, some links direct the users to empty pages or irrelevant information and services. Also, some links direct users to page shows a message that the requested page is not found.
11. Lack of online interaction methods between government agencies and users of e-government services through the websites.
12. Absence of available e-payments methods that facilitate the service delivery process through the website. Users of e-government services still have to go to the government offices to make their payments.

The aforementioned points are only examples for a wide range of problems and difficulties that can be seen and experienced by any user of e-government websites. These shortcomings might hinder the overall progress towards successful application of service integration in e-government implementation in Jordan.

It also has negative effects on the users' interest to take part in e-government activities. If users were unsatisfied or disappointed with their experience of visiting e-government portal or navigating any government agency website to obtain any service, they will take a bad first impression and will not be happy to try it again.

Therefore, such shortcomings and drawbacks must be urgently taken into careful consideration by the decision makers in Jordanian e-government to find out the right solutions that assure positive users' participation and higher levels of satisfaction.

According to Mohammad, Almaraabeh and Abu Ali (2009) and Al Dahuod et al. (2011), the following hierarchy of services and subservices are included within the architecture of Jordan e-government portal. They also claimed that these services had been determined after a comprehensive study of all Jordan governmental sites on the web supported by a general but strong knowledge of the governmental hierarchy in Jordan:

1- Communication Services:

This includes services such as mail and postal parcel services, postal money order and postal saving bank services, express mail services, and other related communication services.

2- Economic Services:

This includes services such as trade mark registration, trade name registration, patent registration, export registration, import registration, taxation, and other related economic services.

3- Education and Training Services:

This includes services such as getting education certification, private studying registration, attending kindergarten, attending primary school, attending secondary school, scholarship applications, and other related educational and training services.

4- Health Services:

This includes services such as birth date certification, death certification, new medical construction permissions, immunization, and other related health services.

#### 5- Industry Services:

This includes services such as industrial register entry, permission to construct new project, permission to change the project pivot, and other related industrial services.

#### 6- Labor Services:

This includes services such as graduation application, getting different types of certifications and other related labor services.

#### 7- Natural Resources and Environment Services:

This includes services such as evaluation of environmental effects of constructions, environmental library, procedures of finance from environmental protection agency and other natural resources and environmental services.

#### 8- Population and Human Settlements Services:

This includes services such as booking housings or professional units, booking an industrial project land, booking a land for population or services projects, and other related services.

#### 9- Tourism and Antiquities Services:

This includes services such as getting tourist construction forms, obtaining and renewal of a tourist guide license, and other related tourism services.

#### 10- Transportation Services:

This includes services such as several activities performed in the port of Aqaba, air transportation, Jordan travel directory, and other related transportation services.

In this study, a light is shed on the role of service integration in e-government implementation in Jordan by exploring its current situation in addition to identify various critical factors affecting this role in more details in an attempt to develop a model that demonstrates this role based on theoretical and empirical investigation.

Therefore, the vital role of literature review and previous studies can be seen clearly in formulating the questions of interviews in the qualitative part of the study and designing the questionnaire in the quantitative part in the light of the findings from interviews.

That will give satisfactory results to support the successful implementation of service integration in e-government and applying the proposed model to the context of Jordan as one of developing countries.

## 2.5. Summary

This chapter presents a conceptual context and theoretical foundation of existing research towards understanding the role of service integration in e-government implementation in Jordan. Therefore, main concepts, definitions, objectives, benefits, challenges and models related to the research topics are presented and discussed. The relevant literature for main research areas was reviewed: e-government, service integration and service integration in e-government implementation in Jordan.

The next chapter will address the selected methodology used to conduct this research in order to achieve its main aims and objectives through providing answers to the main research questions based on the perceptions of involved people from the fieldwork.

## **Chapter 3: Research methodology**

### **3.1. Introduction**

This chapter explains the research methodology that is used in this study and discusses the possible methods that are applied in this kind of research in general. It also investigates their approaches in the light of this particular study.

This chapter consists of four sections. Section 3.2 provides an overview of research methodologies that could be used in this kind of research. Section 3.3 presents the research design of this work and describes the data collection and analysis procedures. Section 3.4 summarizes the chapter.

### **3.2. Overview of research methodologies**

The methodology for this research employed mixed method approach that combines a qualitative interviews and quantitative questionnaires in the same study in order to answer the main questions of the research and achieve its main objectives.

Mixed method provides more understanding for the problem under study by utilizing more than one technique to collect and analyze the required data (Creswell, 2009). In this study, the data collection process consists of two sequential stages of qualitative and quantitative approaches.

The qualitative stage utilizes semi-structured interviews to extract main factors influencing the role of service integration in e-government implementation in Jordan. The quantitative stage utilizes large scale survey questionnaire to test the findings of the qualitative stage and to validate the emergent research model after analyzing qualitative findings.

Consequently, the analysis of the data collected was done in two stages starting instantly after the collection of qualitative data from the fieldwork through interviews. In the first stage, the data from interviews will be analyzed with the aim of creating and developing the research model that clarifies the role of service integration in e-government implementation in Jordan. In the second stage, the data resulting from the questionnaires were analyzed using a variety of statistical tests in order to confirm the proposed research model and validate its main constructs.

After the two stages of data collection and two stages of data analysis, both qualitative findings and quantitative results were interpreted. This step of interpreting the entire analysis has a positive impact as it leads to confirm and approve the final version of the research model.

The mixed method strategy that is described above can be classified under the sequential explanatory mixed method approach in which findings of the data collected and analyzed qualitatively through interviews can be tested and validated quantitatively through questionnaires in one study.

In this approach, the results of the entire study are more accurate and reliable since the collected data came from more than one source. Thus, each stage can support the obtained data from the other stage through supplementary explanation and justification.

In addition, more elaboration and expansion of the findings and results of each stage of the mixed method approach are guaranteed through two rounds of data collection and two rounds of data analysis before the final interpretation of both stages take place.

This method is easy to implement because the various stages of data collection and analysis are well separated with no intersections among them.

### 3.3. Research design

This section describes the research design that is applied in this study. The main phases of the research that have been conducted using mixed method approach are:

#### Phase 1. Reviewing the literature:

This research begins with a comprehensive literature review as a starting point towards understanding the role of service integration in e-government implementation in Jordan in order to gain essential knowledge about the results of other studies that are closely related to research topic and to identify the research theoretical background. Relevant literature under the following topics were reviewed: e-government, service integration and service integration in e-government implementation in the context of Jordan (see chapter two for more details).

#### Phase 2. Conducting interviews:

Based on stated research questions addressing the factors that are currently influencing the role of service integration in e-government implementation in Jordan, in addition to the outcomes of reviewing the previous studies throughout the literature, a set of questions regarding the role of service integration in e-government implementation in Jordan have been formulated and a set of face to face interviews have been designed and carried out.

Fifteen participants were selected to take part in the interviews and to answer the questions in order to elaborate on the findings of literature and relate them into the actual fieldwork.

The findings of interviews help in answering the research main questions regarding critical factors affecting service integration in e-government implementation and

assessing the current situation of service integration in e-government implementation in Jordan. It also provides a better understanding of the current situation of Jordanian e-government in general and service integration in particular.

Moreover, participants have mentioned major key points related specifically to the case of Jordan such as different procedures among government agencies, low level of coordination and cooperation among various government agencies, absence of data sharing policies among various government agencies, absence of public awareness of e-government services and many other important aspects that can be seen in more details in chapter four.

The participants also recommended significant suggestions and improvements to develop service integration. The interviews give important insights on the users' and providers' perceptions of the e- government integrated services in Jordan.

The data analysis procedure implemented in the qualitative part of this research followed Creswell (2009):

Step 1: Transcribing the interviews in order to organize and prepare the data for analysis.

Step 2: Understanding the general concepts of the participants' opinions by reading all the data obtained from the interviews in order to gain a comprehensive view about the topic.

Step 3: Coding which is based on classifying and categorizing all data into segments.

Step 4: Preparing for analysis and creating themes from the data.

Step 5: Finding relationships between emergent themes.

Step 6: Interpreting the meaning of themes and acquiring the knowledge about them from the data analysis activities and processes.

The core themes revealed from the interviews represents the basic blocks to build the research model which is one of the main outcomes of this study. More details about the interviews are presented in the next chapter.

### Phase 3. Developing the research model:

Based on the outcomes of the previous two steps, a set of major critical factors that influence the role of service integration in e-government implementation in Jordan can be identified. These critical factors are classified under eight main groups including current situation, managerial, cultural, social, political, legal, technological, and economic factors.

The research model is developed to achieve the main aim and objectives of the study towards understanding the role of service integration in e-government implementation in Jordan by investigating the impacts of potential critical factors on the development of service integration within e-government implementation.

Besides the contribution of this model in establishing a solid understanding of the role of service integration in e-government implementation in Jordan and consideration of a wide range of critical factors that have a huge impact on the development of service integration, the proposed research model aims to identify and evaluate the potential critical factors from double-view perspective of two types of stakeholders involved in e-government activities (providers and users).

After developing an initial version of the model, based on the analysis of the findings of the first stage of the qualitative part of this study, it will be tested in the second stage of the quantitative part by employing a large-scale survey questionnaire that considers both perspectives of providers and users.

This leads to validation of the proposed research model in order to confirm the final version that provides in-depth understanding of the role of service integration in e-government implementation in Jordan.

Phase 4. Formulating the questions:

In this step each construct in the proposed research model and all the factors that are classified under that construct were carefully considered and put into words in form of plain statements used to reflect the main ideas of the items under consideration. The resulted statements will be checked and reviewed many times by the researcher to make sure they are written in the most appropriate way that accurately describes the measured item.

The first version of the questionnaire contains two parts; the first part addresses demographic information of participants such as their gender, age, educational level, information technology and internet skills, average daily use of internet and average use of e-government services.

The second part of the questionnaire consists of eight sections: current situation of service integration in e-government implementation in Jordan, managerial factors influencing service integration in e-government implementation in Jordan, cultural factors influencing service integration in e-government implementation in Jordan, social factors influencing service integration in e-government implementation in Jordan, political factors influencing service integration in e-government implementation in Jordan, legal factors influencing service integration in e-government implementation in Jordan, technological factors influencing service integration in e-government implementation in Jordan and economic factors influencing service integration in e-government implementation in Jordan.

Each section contains a list of questions formulated to measure a specific construct of the research model and to test the perceptions of participants regarding the effects of this construct on their understanding for the role of service integration in e-government implementation in Jordan.

In order to answer the questions, the participants should indicate their level of agreement or disagreement with each question by selecting one of the following options: strongly agree, agree, neutral, disagree, or strongly disagree.

Selecting this range of options will enable the participants to decide on their answers in easy and simple way. Additionally, using such scale will facilitate the process of data collection and analysis using statistical software and their tools.

To ensure that the questions were well written and organized, a plain and simple language that can be easily understood by the participants was used. For instance, no more than one idea was included in a single question, no problematic words or difficult phrases were used, and leading questions that might direct the response towards a specific answer were avoided.

Since Arabic language is the mother tongue of all participants, a careful translation from English to Arabic was conducted and both versions have been checked and reviewed for any errors in grammar, spelling, wording and meaning.

#### Phase 5. Reviewing the questionnaire:

After reviewing the language and contents of the Arabic draft of the questionnaire, it was sent to seventeen reviewers to make their suggestions and comments in order to make the updated version of the questionnaire that will be distributed to participants.

The reviewers were selected from relevant areas of specialty: measurement and evaluation, computing and business. Based on their comments, some questions were deleted because they were considered out of the scope of this study, some new

questions were added to some constructs such as social and political constructs, some questions were modified or rewritten to avoid vagueness and improve the clarity, sequence of questions were rearranged, and the section headings were added to enable participants to gain full understanding of the questions.

#### Phase 6. Conducting paper-based pilot study:

It is necessary to test the questionnaire on a small sample before starting the primary survey questionnaire on a large scale. Therefore, a pilot study of the paper-based version of the questionnaire was conducted on a sample of forty participants; ten providers and thirty users of e-government services.

The aim was to obtain participants' feedback on every aspect of the questionnaire contents and design and to spot any errors or difficulties that might hinder the research process when main questionnaire take place.

The procedures followed for conducting the pilot study is slightly similar to the guidelines introduced by Peat, Mellis and Williams (2002):

1. Run a pilot questionnaire to selected participants in exactly a similar way as it will be controlled in the main questionnaire.
2. Ask the participants for their feedback regarding vagueness and hard to understand questions.
3. Monitor the time taken to answer the entire questionnaire and test its applicability.
4. Review the responses of each question and whether it presents satisfactory distributions.
5. Evaluate the possibility to interpret and analyze the responses against research objectives and questions.
6. Confirm that all questions are answered, and each question has only one answer.

7. Amend wording or scaling for questions that give unexpected or extraordinary responses.
8. Remove all ambiguous or confusing questions and make necessary amendments to the questions.
9. Modify, correct, improve and conduct another pilot.

As a result of this pilot, some modifications to design and contents of the questionnaire were made, and a web- based questionnaire is considered based on the participants' feedback.

The choice of conducting another pilot study was considered to overcome the challenges faced during the first pilot study. One of the main obstacles was the possibility to conduct a face-to-face large-scale survey questionnaire that needs a lot of time, effort and cost. Therefore, a web-based survey was the solution to such a problem. Therefore, a second pilot study was conducted.

#### Phase 7. Conducting web-based pilot study:

In this step, a second pilot study utilizing the use of web-based questionnaire rather than a paper-based questionnaire was conducted on a sample of forty participants divided into ten providers and thirty users of e-government services.

The same procedures applied in the first paper-based pilot study were used to administer the web-based questionnaire employed in the second pilot study. However, unlike the data obtained from the paper-based pilot that were not measured using statistical tests, the data from the web-based pilot are used to statistically test and assess the validity and reliability of the research instrument implemented in this study. SPSS software was used to confirm reliability by calculating and analyzing Cronbach's alpha on one hand, and to confirm validity by calculating square root of reliability for all constructs on the other hand.

#### Phase 8. Conducting a large-scale survey questionnaire:

In an attempt to achieve the main aim and objectives of this study and to completely answer the research questions, a large-scale survey questionnaire was employed in the second stage of mixed method approach implemented in this study to evaluate the perceptions of providers and users of e-government services in Jordan.

The main focus of the interviews conducted in the qualitative part of the study was to build on the literature findings and to extract the key themes that can be used to create and develop the research model.

On the other hand, the main focus of the questionnaire conducted in the quantitative part of the study was to test and validate the proposed research model. In this stage, the final version of the questionnaire was approved to contain six questions that obtain demographic information about the participants in the first part and fifty-eight questions that acquire participants' perceptions about the eight constructs of the proposed research model in the second part.

The questions were written in a way that enable the participant to complete a response in less than ten minutes in order to encourage them to complete the questionnaire and answer all the questions in all sections. The option of multiple choice questions was selected, and the open-ended questions were avoided while writing the questions. As a result, participants are able to read, understand and answer the questions without any kind of confusion or misunderstanding.

Since this research aims to examine the perceptions of users and providers of e-government services, the sample population for each stakeholder is different.

The sample for the users is drawn from the University of Jordan because the staff and students at this university have the skills of computer and internet that enable them to use the e-government services, and, therefore, to effectively response to the web based questionnaire.

The sample that represents the providers is drawn from the employees of Ministry of Information and Communication Technologies (MoICT) that is responsible for administering e-government program in Jordan, and the employees are familiar with e-government services.

Their perceptions concerning the benefits, challenges, and progress of service integration in e-government implementation and the development of e-government services are taken into consideration to acquire needed information about the factors affecting service integration in e-government implementation in Jordan.

The questions of the questionnaire were designed to measure the constructs of the research model accurately, so they were linked to the main research objectives and questions identified earlier in chapter one.

As mentioned earlier in this phase, besides the questions related to the demographic information about participants in the first part, the second part of the questionnaire consists of eight sections that reflect the objectives of the study and provide answers to the main questions. The first section presents the questions that are linked directly to the first research objective and endeavor to answer the first research question that is related to evaluation of current service integration in e-government implementation in Jordan from the perspectives of providers and users of e-government services.

First research objective: to investigate the importance of the role of service integration in e-government implementation and assess the current situation in Jordan.

First research question: what is the current situation of service integration in e-government implementation in Jordan?

The second section of the questionnaire presents the questions that are linked directly to the third research objective in an attempt to answer the third research question that is related to the expectation of the participants about the role of service integration in e-

government implementation in Jordan and the recommended improvements that can be suggested to enhance this role.

Third research objective: to recommend a set of improvements on the role of service integration in e-government implementation in Jordan as an example of a developing country.

Third research question: what are the recommendations and improvements that can be suggested to transfer service integration in e-government implementation in Jordan from the current situation into a preferred situation?

Finally, the last sections numbered from two to eight present the seven main constructs that contain factors influencing the role of service integration in e-government implementation in Jordan according to the perception of providers and users in an attempt to support the second objective of this study and answer the second question associated with it. The seven categories of factors are managerial, cultural, social, political, legal, technological and economic.

Second research objective: to develop a model that illustrates the main factors influencing the role of service integration in e-government implementation in Jordan.

Second research question: what are the major critical factors influencing the role of service integration in e-government implementation in Jordan?

Phase 9. Validating the research model:

After collecting the responses from all responded providers and users, the analysis process commenced, and analysis of the collected data went through different steps and procedures including data editing, data cleaning, data entry, data manipulation, data transformation, analysis of descriptive statistics, analysis of inferential statistics, and development of conclusions.

SPSS software has been used to apply various statistical techniques to validate the proposed research model including for example: analysis of Means and Medians to calculate the attitude of respondents regarding all study constructs, Chi squared test to examine any relationship between the type of respondent (provider or user) and all demographic characteristics, and Mann Whitney U test to compare the perceptions of the two groups of respondents (providers and users) about the role of service integration in e-government implementation in Jordan.

Phase 10. Interpretation and explanation of analyzed data:

This step includes the interpretation of the analyses of both qualitative and quantitative data implemented in the mixed method approach selected to carry out this study. This will lead to the approval of the final research model of service integration in e-government implementation in Jordan.

A set of recommendations for improving the role of service integration in e-government implementation in Jordan were suggested in order to provide useful insights for e-government decision makers and policy shapers about the level of service integration of e-government implementation in Jordan based on the analysis of perceptions of the main types of stakeholders involved in e-government interactions including providers and users of e-government services.

As a result of this step, the model for understanding the role of service integration in e-government implementation in Jordan was confirmed and the final version of the model was approved as a major outcome of this study.

### 3.4. Summary

A brief explanation of all research methods and strategies that were employed in this study were described in order to achieve the overall aim and objectives of the study towards understanding the role of service integration in e-government implementation in Jordan.

This chapter started with an introduction section that provides an overview of the chapter contents followed by an introduction to the research methodologies and a justification for mixed method approach used in this study. After that, the research design section presented a description of the steps and phases that explain the whole research process and provide a roadmap to guide the research study.

In the next chapter, a light will be shed on the first part of the mixed method approach and the details of data collection and analysis procedures employed in this study using interviews.

## Chapter 4: Interviews

### 4.1. Introduction

In chapter two, literature and previous studies related to the research topic were reviewed in order to gain basic knowledge and general background of the role of service integration in e-government implementation in Jordan.

This chapter will build on the main outcomes of literature review in an attempt to establish a solid foundation for the development of a new research model that aims at understanding the role of service integration in e-government implementation within the context of Jordan.

As can be seen in the previous chapter, the selected methodology for conducting this research employs mixed methods approach that combines qualitative and quantitative data collection and analysis. All information regarding the use of the qualitative approach through utilization of semi-structured face to face interviews are provided in this chapter.

This chapter consists of five sections. The first section 4.1 is the introduction for the chapter and the second section 4.2 is an overview of interview design followed by section 4.3. that presents the classification of interviews into three groups according to the different roles of participants in e-government and provides a brief description about each of them. Section 4.4 describes the emerged themes after conducting interviews using qualitative data collection and analysis technique and the final section 4.5 provides a summary for the chapter.

## 4.2. Interview design

The goal of this stage of the study is to develop the research model using qualitative data collection and analysis techniques while the other stage (discussed in Chapter 5) aims to validate and confirm the developed research model using quantitative data collection and analysis techniques.

The purpose of mixing the two techniques in a single study is to provide full understanding of the role of service integration in e-government implementation in Jordan based on in-depth exploration on one hand and breadth investigation of participants' views on the other.

The in-depth exploration for the research topic can be guaranteed using qualitative part of mixed method approach by interviewing a small group of expert people who are able to provide very rich information regarding the research topic. Meanwhile, the mixed method approach provides breadth of exploration for participants' views regarding the topic under study by surveying a large number of people using large scale survey questionnaires.

“Interviews are a systematic way of talking and listening to people, and collecting data from individuals through conversations (Zikmund, 2003)”. The purpose of the interviews is to identify a set of critical factors that supports understanding of the role of service integration in e-government implementation in Jordan taking the perspectives of providers and users of e-government services into consideration. These factors are used as a foundation or an essential starting point to develop a set of basic blocks of our research model. To achieve this goal, fifteen interviews were carried out with participants who are involved or working on e-government projects.

The fifteen interviews are classified as follows: six interviews with experts and academic researchers in the field of e-government adoption and development, six

interviews with experienced programmers from the government sector and three interviews with experienced programmers from the private sector as illustrated in Table 4.1.

The number of interviews was determined so that it is not too large to avoid additional cost, time and effort, yet to be large enough to cover all important aspects and derive all possible themes that are playing a crucial role in the development of reliable research model that has the ability to achieve the objectives of the study and provides satisfactory answers to research questions.

Various types of participants and their roles within e-government implementation in Jordan reflects the importance of their responses in providing a comprehensive understanding and multi-view perspectives of the topic taking into consideration the perceptions of providers and users of e-government services.

Table 4.1. shows the various types of participants and their roles in e-government program in Jordan.

Table 4.1. Interviews' participants

Type of Participants	Count of Participants
Government sector's experts	6
Academic sector's experts	6
Private sector's experts	3
Total	15

To build trust and familiarity between the researcher and candidate participants in advance, quick and short contact using e-mail and telephone calls were utilized. An official letter from the director of studies for research was provided to participants and their organizations requesting support for the researcher in this study (see appendix 1).

The places, dates, time and duration of interviews have been arranged with candidate participants in advance via e-mail, telephone or directly by visiting them in their offices when it is applicable.

To be familiar with the fieldwork environment of the candidate participants and to take a real flavor of their job conditions, a number of prior interview visits were made to the participants' organizations and agencies where the researcher was able to meet a group of candidate participants and introduce himself directly to them. Those meetings have made a great impact on the candidate participants and increased their interest and willingness to take part in the study.

Interview logistics were flexible, and the arrangements have been changed many times in agreement with participants requesting postponing or adjusting the settled plans due to their urgent conditions including busy schedules or double booking themselves.

To achieve the goals and objectives of this study, conducting semi-structured interviews was the best option to take the full benefits of interviews compared to structured or unstructured types of interviews. Semi-structured interviews combine the advantages of two other types and overcomes their deficiencies at the same time through assuring higher levels of interactivity and flexibility in exploring the topic in depth and concentrating only on the useful information in the scope of this study without going far beyond the topic under question. This method offers a good way to save the time of interviews and avoid any investigation of unrelated topics.

Moreover, semi-structured interviews were evident to be more useful in this study compared to structured interviews in terms that they are providing the researcher with a considerable space of freedom to ask about any interesting ideas or thoughts that might come up during the interviews. The researcher is not required to stick to the list of questions that has been written in advance.

Generally, interviews can be conducted either face to face in the same place or remotely over the telephone. The decision was to choose the face to face technique rather than a telephone technique because it is most suitable in the context of this study.

As a starting point of each interview, the researcher counted on the previous contact to encourage participants to start talking freely without any kind of constraints or restrictions in view of the fact that the previous contact broke the ice and made the participants more open to the questions by giving them a high level of confidence that effectively increase their contribution in the conversation.

After that, the researcher gave a general introduction about the study including its importance, objectives, contributions and future impacts. Also, a brief description of the key subjects or issues under study were introduced to the participants to gradually prepare them to response to questions and enrich the discussion.

At this point, the researcher has assured the participants that ethical issues were taken into consideration throughout the interviews and all practices and procedures conducted in this study are compatible with the ethical guidelines employed in scientific research. The participants were assured that their responses would be kept confidential. They were not being asked to provide any personal information or any private data about their organizations. Individual differences concerning the questions understanding and interpretation were respected. The researcher answered any questions or concerns asked by the participants before starting the interviews.

When the participants were satisfied with all the answers, and the procedures were clearly explained to them, a consent form and participation sheet was signed as a confirmation of their acceptance to take part in the study.

The questions for each interview are wide-ranging and varied according to the role of participant in e-government implementation, but generally, the first few questions aimed at gradually entering the atmosphere of the study towards a better understanding

of the role of service integration in e-government implementation in Jordan. Therefore, they tackled personal characteristics and interests of the participants towards talking about their professional background.

The first set of questions is an introductory for the second set of questions that moves the focus on the core subjects of the topic under study and discusses their major concepts such as objectives, benefits, challenges and current situation of service integration in e-government implementation in Jordan.

Based on the main objectives and questions that are presented in chapter one, there were three general dimensions to guide the design of the questions for the interviews. Those dimensions are: importance of the role of service integration in e-government implementation in Jordan, current situation of service integration, and key factors affecting the role of service integration in e-government implementation in Jordan.

Firstly, a set of questions under the first dimension have been asked. For instance, how do you see the role of service integration in e-government implementation in Jordan? is it really important? what are the key factors affecting this role? and how?

After that, a second set of questions under the second dimension have been asked such as how do you evaluate the current situation of service integration in e-government implementation in Jordan? what are the main key stages achieved towards the full service integration? are there any obstacles or challenges that hinder the progress in this regard? do you suggest any solutions or improvements? what are the considerable changes that are needed to reach the preferred situation of service integration in the near future? where do you see the status of service integration of e-government implementation in Jordan in the upcoming years? are you optimistic or pessimistic about the future of service integration in e-government implementation in Jordan? and why?

Finally, a third set of questions under the third dimension have been asked such as what are the key factors that have positive impacts on the role of service integration in e-government implementation in Jordan? what are the key factors that have negative impacts on the role of service integration in e-government implementation in Jordan? what are the most important factors from your perspective? do you think that providers and users of e-government services agree on these factors?

After listening to the participants' responses on those three sets of questions, a final question about recommended improvements and enhancements that must be applied to e-government implementation in Jordan to advance the progress in service integration was asked. Examples of the interview's questions are listed in appendix 2.

At the end of each interview, the researcher and participants went over the notes taken by the researcher throughout the interview to ensure that they accurately reflect the ideas and views of the participants.

A thank you e-mail was sent to the participants and their organizations after each interview to appreciate their willingness to participate and to acknowledge their significant role towards making this study reaching its goals and objectives.

#### 4.3. Classifying interviews into groups

As mentioned earlier in the previous section, the participants in the interviews were classified under three major groups including academics and researchers, government sector's experts and private sector's experts.

Dividing the participants into these three types support the multi-view perspective employed in this study to take in consideration the viewpoints of all types of involved people in e-government domain in Jordan. Internal and external views of e-government implementation are taken into account throughout this study.

The following subsections introduce a brief description about each group of participants and provide a justification for selecting them to take part in the interviews in order to improve the findings of the study.

#### 4.3.1. Government sector experts

The contributions from the government side is very important to expand the available knowledge and give new insights on the role of service integration in e-government implementation in Jordan.

The selected participants from the government sector have a broad knowledge and expertise in regard to service integration due to their sensitive positions in a number of e-government initiatives and projects in Jordan.

They gave very useful information and valuable enlightenments about plans and polices for applying service integration in e-government implementation in Jordan. A detailed description of advantages and potential benefits of applying service integration were provided throughout this round of interviews. At the same time, a set of serious obstacles and challenges facing the implementation of service integration on a large scale were identified. Incompetency to handle these challenges was one of the main reasons behind the failure of many e-government projects.

At the end of each interview, significant recommendations for improving the role of service integration in e-government implementation in Jordan have been suggested by the participants.

The outcomes of these interviews have contributed intensely to the development of our research model in order to fully understand the role of service integration in e-government implementation in Jordan. For example, new themes emerged from the interviews such as lack of coordination and cooperation between government agencies

regarding deployment of service integration, the huge gap in the level of delivered e-services between government and commercial companies and the difficulty to convince people to use new electronic services instead of old paper-based services due to the lack of trust in new technologies.

While existing studies handle this topic from theoretical point of view, what distinguishes this study is that it focusses on the practical side of the subject based on the advanced levels of knowledge and practical experience of government sectors' participants who have many years of experience and knowledge in many e-government projects that are already completed or projects that are still under processing.

Six interviews with people of government sector were able to give good indications about the perspectives of various types of stakeholders especially the providers of e-government services.

#### 4.3.2. Academic sector experts

Despite the importance of the contribution of government sector's participants, practical experience and hands on knowledge does not draw the full picture of the role of service integration in e-government implementation in Jordan without the support of solid theoretical foundation.

Therefore, the contributions of experts from the government sector have to be supported by an academic viewpoint that gives a theoretical base for the topic under study and focuses on the effects and consequences of the role of service integration in e-government implementation in Jordan based on academic investigation that considers both the practical and theoretical points of view.

Participants from academia were involved in some e-government activities and projects as consultants or collaborators or even directly managing some e-government projects

or working as a coordinator between government agencies and other internal or external parties.

Major themes and inferences were extracted from interviews with experts from academic sector such as lack of public awareness about the progress achieved in e-government projects especially the deployment of service integration, shortage of e-government integrated services available for public via e-government portal and the need to set clear managerial policies that support data sharing among all government agencies.

Six interviews have been conducted with people of academic sectors; three participants came from computing background and the other three came from business background to ensure a comprehensive and divers range of views were taken into account.

#### 4.3.3. Private sector experts

Taking the perspective of experts in both government and academia is one of the robust ways that distinguish this study from other studies that considers only one theoretical or practical insight of the topic under study. To add yet a greater value to this study, three private sector's experts involved mainly in e-government projects and activities have been selected to take part in the qualitative part of this study through interviews. Their partnership and direct contact with many government agencies to help them creating and developing solutions for many e-government services was the main reason for considering their participation in the interviews.

Their knowledge and experience from the fieldwork were greatly contributed to our study through identifying an important set of themes that have to be taken into consideration such as low level of standardization for policies and procedures between government agencies, resistance to change in many government agencies and a number

of legal challenges including but not limited to unclear, outdated and insufficient regulations.

#### 4.4. Key findings of interviews

Key themes and findings of interviews were extracted, transcribed, translated from Arabic to English and classified under a set of categories based on the main characteristics in common and the subjects they address (see appendix 3).

By the end of this classification for all extracted themes, a set of eight dimensions were identified to contain critical factors that enrich our understanding of the role of service integration in e-government implementation in Jordan.

The first dimension contains the factors that can be related to understanding the current situation of service integration in e-government implementation in Jordan.

The second dimension contains the factors that can be related to managerial impacts of service integration in e-government implementation in Jordan.

The third dimension contains the factors that can be related to cultural impacts of service integration in e-government implementation in Jordan.

The fourth dimension contains the factors that can be related to social impacts of service integration in e-government implementation in Jordan.

The fifth dimension contains the factors that can be related to political impacts of service integration in e-government implementation in Jordan.

The sixth dimension contains the factors that can be related to legal impacts of service integration in e-government implementation in Jordan.

The seventh dimension contains the factors that can be related to technological impacts of service integration in e-government implementation in Jordan.

The eighth dimension contains the factors that can be related to economic impacts of service integration in e-government implementation in Jordan.

Those dimensions can be seen as the key basic blocks for the construction of our research model that will be introduced in the next chapter.

#### 4.5. Summary

A detailed description of design and conduction of the interviews were provided. The types of people participated in the interviews and the importance of their multi-view contributions were highlighted. Also, important inferences and key findings that lead to construction of the research model were presented.

Next chapter presents the initial research model and explains its key constructs that emerged from the collection and analysis of the interviews qualitative data.

## Chapter 5: Qualitative findings

### 5.1. Introduction

In this chapter, a research model that aims at understanding the role of service integration in e-government implementation in Jordan as a developing country is proposed based on the results of the previous chapter.

This model provides a great assistance to identify the factors that influence the current situation of service integration in e-government implementation in Jordan, including managerial, cultural, social, political, legal, technological and economic factors.

The foundation for the model is relying on the empirical investigation of the real-world aspects accompanied by theoretical support from previously reviewed literature at the early stages of this study.

Section 5.2 gives an overview of the proposed research model and lists its key constructs. It is divided into two subsections: 5.2.1 addresses the factors that influence the current situation of service integration in e-government implementation in Jordan. Section 5.2.2 addresses seven key constructs or groups of factors that extracted from the fieldwork through interviews and have critical impacts on the development of service integration in e-government implementation in Jordan. The extracted factors are organized into the following seven categories: managerial, cultural, social, political, legal, technological and economic. The chapter concludes with a summary in the last section 5.3.

## 5.2. Research Model

The literature includes a significant number of models that have been proposed in recent decades to adopt and implement modern innovations of information and communication technologies. For example, the theory called Diffusion of Innovation (DOI) was introduced by Everett Rogers in 1962 to explain how innovations and new ideas spread among the people. Another example is the Technology Acceptance Model (TAM) that was introduced by Fred Davis in 1986 to measure the user acceptance of emerging information technologies (Al Busaidi, 2012).

Such models have the ability to identify a wide range of critical factors that control adoption and development of new innovations and technologies.

This research investigates a wide range of previous studies and uses their findings to prepare for semi structured interviews that have been conducted with the goal of identifying key factors that have critical impacts on the current situation of service integration in e-government implementation in Jordan. As a result, a rough model that consists of several critical factors that have been collected empirically from the fieldwork taking the literature theoretical foundation in consideration is introduced.

(See figure 5.1)

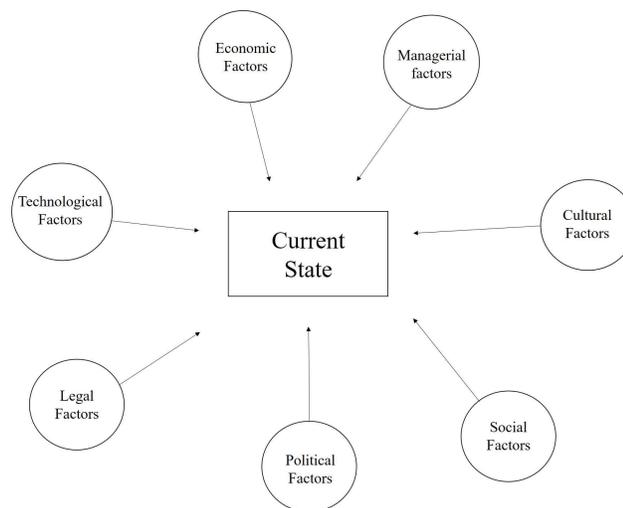


Figure 5.1: Research model

The figure shows that the main construct of the model is the current state of service integration in e-government implementation in Jordan. This construct is influenced by many factors that can be classified into seven categories: managerial, cultural, social, political, legal, technological and economic.

Applying our proposed model to the case of Jordan will provide answers to the main research questions that are linked directly to original aim and objectives of the research.

This model will provide answers regarding critical factors affecting service integration in e-government implementation in Jordan and how they influence the current situation of service integration.

The mixed method approach enabled the construction of our model based on the analysis of qualitative findings from the interviews and helped the validation of the model based on the analysis of quantitative results by conducting a large-scale survey questionnaire in the fieldwork.

Based on discussion and interpretation for empirical results from this research, a set of recommendations for successful implementation of e-government service integration in Jordan can be suggested.

As shown in Figure 5.1, the following are the main constructs of the research model:

- The current situation of the role of service integration in e-government implementation in Jordan.
- The factors that have critical impacts on the current situation of service integration in e-government implementation in Jordan. They are classified under the following seven categories:

1. Managerial
2. Cultural
3. Social
4. Political

5. Legal
6. Technological
7. Economic

In the following sections, a light is shed on the aforementioned constructs to identify the factors that can be linked to each one of them in more details.

The opinions of participants about all factors are discussed below, each participant is given a number from one to fifteen: Participant one is referred to as P1, Participant two is referred to as P2... and so on.

#### 5.2.1. Current situation factors

Based on our investigation of the literature and interviews in the previous chapters, the factors that play a key role in understanding the current situation of service integration in e-government implementation in Jordan are identified.

Those factors include: level of available e-government services, overall progress achieved in development of e-government portal, availability of all required information to complete a whole transaction, ability of direct and immediate interaction between government agencies and all involved stakeholders, online presence of one stop shop to provide all requested services at anytime from anywhere by anyone, level of collaboration among different government agencies to follow a set of clear unified policies and procedures, success of government agencies to keep up with the private sector companies by providing government services in the same level of efficiency and effectiveness as services provided by private sector companies through e-commerce, and availability of wide range collection of integrated services.

Each of these factors gives important indications about the maturity of service integration. Progress in one factor will result in progress in the overall implementation

of service integration in e-government. In other words, the current situation of service integration in e-government implementation in Jordan is considered in an advanced level, if the level reached in each factor is advanced. The construct of current situation has the following factors:

#### 5.2.1.1. The level of available e-government services:

The interviews revealed that the first factor affecting the current situation was the level of available e-government services. Some participants were satisfied with the current level of quality reached for available e-government services. However, other participants were not happy at all because they believe the current level of e-government services is still less than expected and needs more improvements.

One of the participants from the academic sector said: “despite the disagreement on the level of satisfaction about e-government services, all people involved in e-government activities are asking for new services to meet their expanding needs and expectations”.

P11 from the private sector indicates that more attention need to be paid to the progress level of service integration in terms of efficiency, effectiveness and availability. He said “The bureaucratic system in government agencies has negative influence on the overall progress of e-government services. This delays the spread of e-government services in the society”.

Another participant from government sector was unhappy with the overall progress of service integration and mentioned some obstacles that hinder the successful implementation of service integration in Jordanian e-government. These obstacles include: lack of plans and effective strategies that spread awareness of e-services among the public, lack of cooperation and coordination among different government agencies, the power of bureaucratic system in government agencies, shortage of

qualified employees in e-government services and a significant number of technical issues.

Generally, the participants agree on the importance of providing more e-government services efficiently and effectively. Therefore, the level of current e-government services was rated as a critical point or key theme that influences the understanding of current situation of service integration in e-government implementation in Jordan.

#### 5.2.1.2. The level of official e-government portal:

As can be seen from the previous section, it is important to evaluate the level of available e-government services in order to understand the current situation of service integration in e-government implementation in Jordan. However, this point alone is not enough to investigate the perceptions of participants regarding the current situation. Other factors are required to fully complete the current picture of service integration in e-government implementation in Jordan.

It was clear through the interviews that the level of official e-government portal is also an important criterion to evaluate the current situation of service integration. Therefore, this was selected as a second key factor that improves the understanding of current situation of service integration in e-government implementation in Jordan.

Participants have an agreement on the vitality of this theme in order to gain full understanding of the role of service integration in e-government implementation. Many participants underlined the relationship between the current situation of service integration and the level of progress in development of e-government portal. For example, one of the participants (P3) stated that the lack of information and quality services provided through e-government portal is a strong evidence on the little progress achieved in implementation of service integration so far. Consequently, most

participants have an agreement on this point except P12 who did not see any connection or link between two themes, and P14 who stated that a good progress have been achieved in the development of e-government portal during the last year, but this progress did not lead to any kind of progress in service integration.

Other participants highlighted many improvements to e-government portal that cannot be just ignored such as: availability, accessibility, bilingually, more attractive design, more information and more services. A participant from the public sector stated that “significant progress has been made in the last two years in regard to the level of available e-government services, but more time is needed for the public to see the results of this progress through their interactions with e-government portal”.

On the other hand, a group of participants including P1, P2, P3, P8 and P13 have seen these improvements as an important starting step towards applying service integration in e-government implementation but it has no meaning without a full package of enhancements that can be reflected directly on service integration. They mentioned a wide range of obstacles and challenges that hinder the overall progress of implementing service integration in e-government applications such as the gap between the administration and real life implementation , the gap between theory and practice, the lack of coordination and cooperation between different government agencies, the lack of needed infrastructure, the lack of needed resources, the shortage of qualified personnel, the political situation, the legal framework and insufficient regulations, the social problems and security issues.

This kind of debate encouraged the researcher to include the level of official e-government portal as one of the most critical aspects or themes under the current situation of service integration in e-government implementation.

5.2.1.3. The ability to reach all government information using the official e-government portal:

A major question asked in the interview, regarding the current situation of service integration in e-government implementation was about the presence and availability of all needed information about government agencies and their services through the main e-government portal, which are of great beneficial to the public when they are seeking for any government service.

Almost all participants indicated that the majority of government agencies have achieved this stage of e-government and all information regarding services are available on the agencies' websites including the available services, where to apply for a service, the steps to obtain a service and who to contact if more information and details about a service are required.

However, a number of notes and observations in this regard must be taken into consideration to fully understand the current situation of service integration in e-government implementation in Jordan. The following are a few examples of these observations.

There is an estimation that 90% of government agencies achieved the presence stage of e-government where all information and procedures regarding the services they provide are available online (P5). The main focus of those government agencies is to facilitate the service delivery and improve their overall performance in terms of quality, efficiency and effectiveness (P8).

On the other hand, some agencies have only created a website with a limited number of services but the presented information about their provided services are not sufficient, not accurate, not correct, not completed, not updated and countless language grammar and spelling errors can be found (P2, P3, P4, P7, P9, P12, P13, P15).

In addition, many hyperlinks are not working or take the user to empty or irrelevant webpages (P4, P6, P10, P13, P14). P1 and P4 emphasized the need for regular revision and continuous update for all the content of e-government websites especially the main portal, which is supposed to be the first point of contact that allows users of e-government services to obtain any service online.

5.2.1.4. The ability of direct interaction between government and public via official e-government portal:

After considering the presence of all government information regarding e-services which can be seen as a foundation stage to implement service integration in e-government, a light is shed on the next stage of e-government implementation, interaction stage, that focuses on the ability to enhance communications and transactions between government and other involved stakeholders including employees and citizens.

P2 stated that two phases of interaction can be recognized; the first one represents one-way-communication channels that provide online services and information directly to users. Users cannot interact or submit any information during this phase.

The other phase represents two-way-communication channels that enable both sides to transfer online services and information to each other in both directions from government to user and from user to government in order to complete a transaction.

Many e-government agencies in Jordan have succeeded in accomplishing these two phases of interaction but some are still facing obstacles and challenges that limit their successful implementation of interaction stage of e-government services either in the first phase of one-way-communication or in the second phase of two-way-communication (P15).

However, P6 acknowledged a number of significant benefits gained by successful implementation of interaction stage in most government agencies in Jordan. She has identified the following three key benefits: minimizing the time of implementing a service, lessening the cost of delivering a service and reducing the effort required to complete a service.

#### 5.2.1.5. The existence of actual integrated services:

At the end of 2016 fiscal year, the government in Jordan officially announced the introduction of eight specific integrated services such as online issuing of non-convention certificate for citizens and residents in the country. This service was introduced as one of the first integrated services provided via official e-government portal to enable users to fill an online application form, make a payment electronically and receive the certificate without going to any government offices (MoJ, 2016). Yet, a great debate about this big step among interested people in e-government area in Jordan has been started.

P1, P2, P6, P9, P10, P12 and P15 stressed that the introduction of integrated services is not a real achievement that reflects the actual state of service integration in current implementation of e-government in Jordan. According to them, it is just a superficial image because there is no tangible evidence on the existence of integration features for any introduced service in terms of high level of connectivity between different government agencies; high level of collaboration and coordination between different government agencies; high level of compatibility between different databases, software, hardware and networking systems in different government agencies, high level of standardization in procedures and protocols in different government agencies.

They emphasized the fact that without the presence of such characteristics, no fully integrated services exist. It is just an e-service that has a few similar properties to an integrated service but cannot be accepted as a full integrated service.

Another group of participants (P3, P7, P8 and P14) argued that one should not underestimate the new integrated services provided. They claimed that the overall progress towards service integration in the last few years cannot be simply ignored.

There were enormous efforts to develop an official e-government portal to be a single window that provides all kind of e-services to anyone anytime anywhere.

They admitted that the full integration is not achieved yet, but the effort to achieve that is significant and will work at the end.

5.2.1.6. The standardization of procedures and protocols of different government agencies:

Based on the discussion with experts during interviews, the lack of standardization policies for procedures and protocols among different government agencies appears to be one of the most critical challenges that affect current implementation of service integration.

There are always complains among the public about the lack of coordination and collaboration between different government agencies regarding delivery of e-government services. No two government agencies are in agreement about the rules and procedures of how to provide government services to the public (P14). P9 claimed that standardization is a requirement for providing e-government services and the variances in standards between different government agencies are still a big challenge facing the development of service integration in e-government implementation today. According to him, successful standardization makes e-government transactions easier and faster

and people (including citizens and government employees) will be more satisfied with the services.

Standardization is very important for an effective coordination and cooperation between different government agencies (P3, P12). All government agencies should follow similar standards because the rules and procedures utilized to provide government services are the same regardless of the agencies or employees responsible for releasing them (P8).

5.2.1.7. The ability of e-government agencies to reach the advanced level reached by e-commerce and private sector:

The main reason for starting e-government initiatives was the high demand of people to obtain government services in the same level of services provided by e-commerce platforms that are managed by private sector companies.

Governments aim to follow the steps of e-commerce by using the latest technologies that enhance their overall performance in terms of efficiency and effectiveness in order to gain people satisfaction. Efficiency refers to the process of producing e-government services using the fewest effort, time, money and other possible resources. On the other hand, effectiveness refers to the process of producing the right e-government services.

Efficiency can be measured using some key performance indicators such as task completion time and learning time in which the relationship between users' expectations regarding the provided e-government services and the resources used to implement them is measured. Effectiveness can be measured using some key performance indicators such as the quality of solution and error rates in which the outcome of the interaction between users and e-government portal is measured.

However, copying the same models of e-commerce is not an easy task for government agencies due to big challenges that need to be handled properly such as existence of bureaucratic systems and bureaucratic minds. P4, P5 and P8 agreed on the difficulties hindering reaching a high level of e-commerce services. Lack of qualified staff in government sector is one of these difficulties and the reason is the low wages and incentives, insufficient budget issues and administrative differences. A solution could be building strong relationships and collaboration with private sector companies that are able to provide necessary support to advance the level of e-government services to be exactly at the same level of e-commerce services (P9, P10 and P15).

P13 and P14 encouraged the partnership between government and private sector companies to transfer successful models and applications of e-commerce to be implemented in e-government after applying essential customization.

P5 and P11 pointed that it is important to maintain high qualified staff who have the ability to compete with their peers of private sector companies and raise their wages and salaries in an attempt to reverse the direction of movement from the private sector into government sector and not vice versa.

P1 noted that support from highest levels in the government system to the decisions that are facilitating and boosting collaboration with the private sector companies is needed. This support will increase the assigned funds and budget for applying service integration in e-government implementation (P8).

5.2.1.8. The availability of considerable number of e-government services on the official e-government portal:

The number of e-government services available on the official e-government portal is an important factor that can provide great benefits in regard of evaluating the current

situation of service integration in e-government implementation in Jordan based on the perspectives of providers and users of e-government services.

Many Participants noticed that the number of available integrated e-services is very little and needs to be increased in order to achieve the main goals and objectives of e-government (P4, P7, P8, P9, P14, P15). According to P9 who was not satisfied with the time taken to transform plans into actions because the goals of e-government program are supposed to be fully attained by this time of the fiscal year, but it is still in the early stages and needs a lot of time, effort and money to increase the number e-government services on the official e-government portal.

Conversely, P12 expressed her optimistic opinion regarding the ability of e-government projects to increase the integrated services provided through official e-government portal. She expected achieving all essential requirements to have more fully integrated services available on the official e-government portal in two or three years at most. She believes that the major delays happened due to external challenges and emergent complications such as the difficult political situation in the region and its negative cultural, social and economic effects. According to her, dealing with these political situations was a priority on the government agenda and some e-government projects were stopped or postponed due to the lack of financial funding or the need to rearrange priorities to handle the consequences of such political situation especially the social and economic pressure resulted of hosting millions of refugees from neighboring countries such as Syria and Iraq.

Other participants including P14 and P15 were not agreeing with what P12 concluded. They considered these opinions as a way to find excuses for the government to be lagged behind instead of encouraging it to work very hard to handle all the problems without affecting the overall progress of e-government projects.

Despite this debate about the role of government to overcome the current challenges that are facing the implementation of service integration, it is important to consider the perception of providers and users of e-government services regarding this point to fully understand the current situation of service integration in e-government implementation in Jordan.

5.2.1.9. The existence of central administration for e-government projects throughout all government agencies:

Central administration and management of e-government projects and service integration processes were revealed as one of the fundamental factors that have significant effects on the development of service integration to reach the preferred situation in the near future.

According to many participants (P2, P6, P9, P12 and P13), different government agencies should follow one central administration instead of working independently to avoid conflicts and waste of time, effort and money.

This central administration would be responsible for directing the procedures, rules, standards and workflow among all government agencies, in addition to supporting a high level of coordination and cooperation among them to produce and deliver integrated services (P6 and P9).

P2 stressed the importance of this theme by stating that no progress would be achieved in regard of service integration development in the near future as long as there is no central control over the independent work of every government agency.

P13 stated that major challenges and obstacles that might prevent such centralization must be eliminated in advance, prior starting the centralization process, to ensure that no conflicts or negative effects will deter the progress in the future. He mentioned the

competency among different government agencies to take part in service integration processes as an example for these obstacles. In an attempt to be in control over new integrated services in the future, some managers in government agencies use their authorities and privileges to prevent other agencies from using their resources to implement service integration.

If the central administration committee has no power or less authority over all government agencies in regard of service integration, it will not be able to effectively manage the implementation of service integration due to conflict of interest among independent agencies and individual managers (P2).

In response to this issue, P6 and P12 highlighted the need for collaborative subcommittees located in every government agency to work as a mediator that guarantee the procedures, rules and standards that were approved by the central committee are applied in their agencies.

Subcommittees will facilitate communications between the central committee and the government agencies and keep monitoring and updating central committee about any issue that might hinder the progress of service integration.

Members of the central committee and the subcommittees need to be trained through a series of extensive courses and programs to empower them with essential knowledge and skills needed to perform their responsibilities efficiently and effectively (P2).

P1 stated that there is no need to assign new central committee or subcommittees because there are many committees that are actually working on different e-government projects and they just need to be activated or connected together to work towards the same goals and objectives.

5.2.1.10. The continuous development and regular update to support implementation of service integration:

There is a need for continuous improvements on service integration on one hand and well-planned strategies to regularly update all information and services on e-government portal on the other hand. This ensures high quality and optimal performance at all levels all the time.

Lack of plans and strategies to successfully apply the idea of service integration in e-government implementation can be seen as a real obstacle that prevents e-government projects from reaching their identified goals and objectives (P1). These strategies ignore the importance of continuous development of the content of e-government websites whether it is related to information or services. For example, many government agencies' websites still contain the same old information it had at the time of initiation or when the website was launched. There are no updates to help the users and encourage them to use the e-provided e-services. This impedes the use of e-government services in general and negatively affects the trust in electronic participation of people in e-government activities including acquiring integrated services in the future (P5).

P10 stated that people prefer to use the old paper based methods to get government services instead of using modern web based methods due to the lack of trust in new technologies. They think it is not reliable and the content is not accurate.

It is very critical for e-government operations to regularly revise their websites and check the accuracy of the contents in addition to evaluate the usability of posted information. They have to keep monitoring and reporting any issues to resolve them immediately (P4). Also, it is important to update all information instantly through all e-government websites and databases to reduce redundancy of information and to eliminate any contradiction or conflict among different government websites (P8).

5.2.1.11. The spread of public awareness about service integration and encouraging people to use e-government portal:

According to P3, the progress achieved in the area of service integration specifically and e-government in general means nothing if people are not aware of available e-government services or have no idea about them at all. He expressed his disappointment of the marketing strategies used to spread awareness of integrated services and e-government activities among the public.

The same idea was mentioned by P8 who highlighted the importance of increasing public awareness about e-government projects and available e-government services through the official portal of e-government. He stated that most people in Jordan have no idea about the progress of e-government because of poor marketing strategies. According to him, people will be happy to use e-government integrated services and take benefits from them, but unfortunately, they do not know anything about such services due to the lack of information provided by the government.

P11 believes that many government agencies are trying to reach people to inform them about available integrated services and how to use them through various means of media such as TV, radio advertisements and SMS.

P10 argued that the TV, radio, newspapers and magazines are not sufficient enough to reach the public especially the young generation who prefer to use modern ways such as social media networks to get required information and services. Government agencies need to consider modern methods to be creative, innovative and successful in spreading awareness of service integration among the public.

Marketing and spreading awareness of integrated services was chosen as a major factor that has great effects on the future of service integration in e-government implementation. All participants focus on the vital role of media and modern means in

spreading awareness among people in the society on a large scale to encourage them to accept and use e-government integrated services in addition to assist government to achieve the overall objectives of e-government and gain people's satisfaction as a result.

5.2.1.12. The hope for rapid enhancements in service integration in forthcoming years:

Throughout the interviews, a question about expectations regarding the progress of service integration in forthcoming years was asked. The responses varied from one participant to another. The first group of participants were optimistic and have high expectations based on their own evaluation of current situation of service integration in e-government implementation in Jordan while another group of participants were pessimistic and had doubts that service integration will not be fully implemented in Jordanian e-government due to a number of big barriers and obstacles that are not taken in consideration by the government and it will have negative effects on the overall progress in the future as long as no real actions are taken.

For example, P1, from the optimistic group, indicated that he noticed significant improvements towards service integration in e-government implementation in Jordan and he has confidence that such great steps will continue in the future, so people can see the results on the ground in not more than two or three years at most.

However, P7, from the pessimistic group, was very disappointed with the level of service integration and progress achieved since fully integrated services were supposed to be a reality by now based on the plans and schedules announced by the government. So, he does not see any actual progress towards the goal because the same obstacles still there and no achievements seem to be accomplished in the next few years as long as the same old fashion with the same typical mentality is leading the project.

The final group of participants were neutral in expressing their hopes or future expectations about the prospects of service integration in e-government because they have some doubts based on their evaluation of the current situation, but they also have some hopes and expectations to see the light at the end of the tunnel.

P10, from the neutral group, agreed that there are good achievements regarding service integration such as online issuing of non-conventional certificates but there are many challenges that need to be solved before giving an expectation about the future situation of service integration in e-government implementation in Jordan.

### 5.2.2. Critical factors construct

Our research model lists fifty-eight factors that have impacts on the role of service integration in e-government implementation in Jordan. Those factors are very important since they have influence all aspects of service integration and understanding their role in e-government implementation is essential.

The role of those factors regarding service integration is critical because some factors have positive impacts on the overall development and implementation of service integration in e-government and others have negative impacts. For this reason, those factors are chosen to express the third construct in our research model.

It is necessary to mention that some of those factors were extracted from the literature and experts in the field through initial interviews. Some factors are constructive, they can advance the integrated services, and others are destructive working as obstacles that preventing the advances of service integration in e-government implementation to take place.

In order to study and analyze those factors, we organized them into seven main categories: managerial, cultural, social, political, legal, technological and economic.

Figure 5.2 shows the classification of the critical factors influencing service integration into seven main categories and the importance of the perceptions of providers and users about the role of service integration in e-government implementation in Jordan.

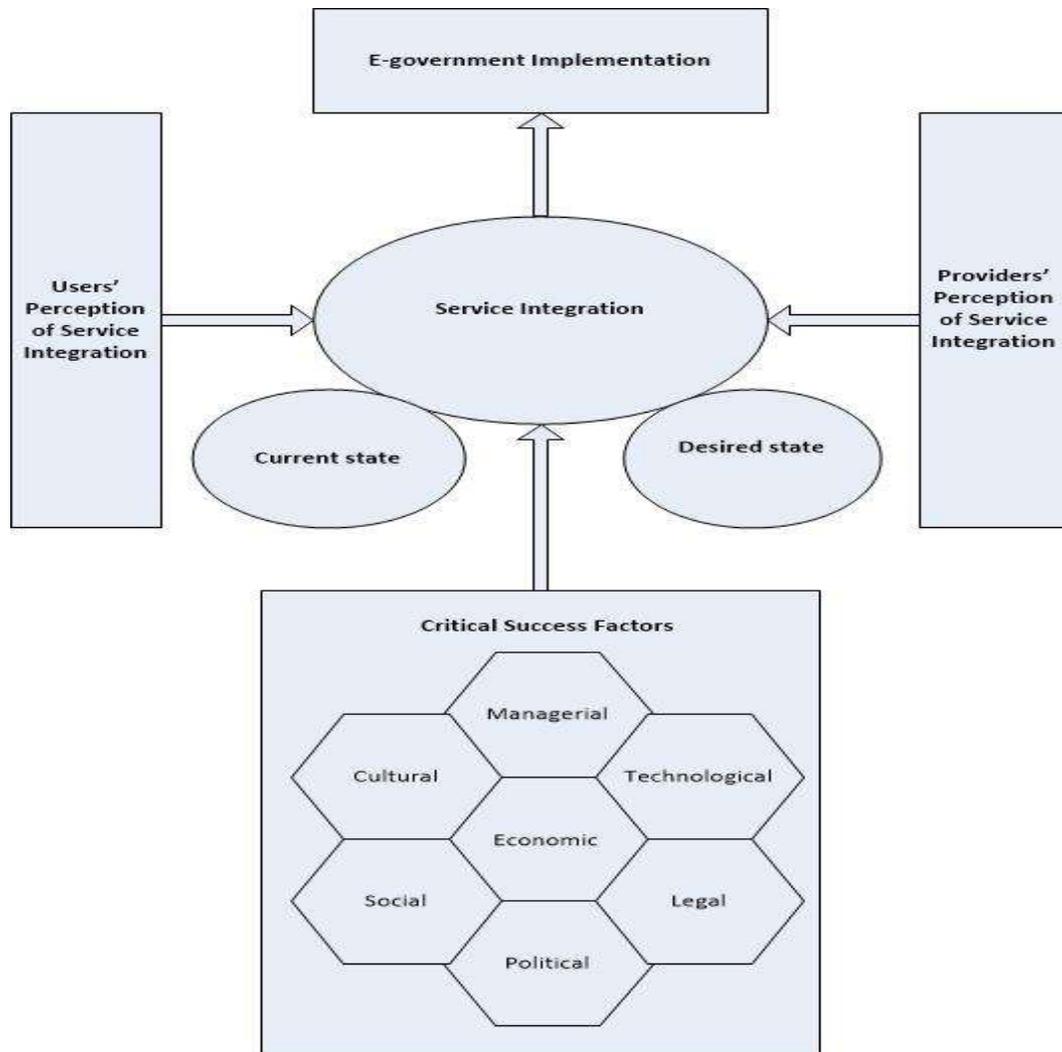


Figure 5.2: Classification of critical factors based on stakeholders' perceptions

#### 5.2.2.1. Managerial factors

Managerial factors are those factors related to the functions, responsibilities or activities of management and administration in government. The following factors are classified under the managerial category:

- Importance of providing policies that support data sharing between government agencies.
- Fear of change by government employees.
- Frequent changes in administrative policies for government agencies.
- Shortage of qualified employees, due to low wages and lack of incentives in government agencies.
- Fear of some government employees of losing their jobs as a result of implementation of integrated services.
- High levels of tracking and monitoring the work of government employees.
- Threatening the advantages of those who benefit from keeping the current situation unchanged.
- More efficient monitoring for the progress of government transactions.
- Limited level of human freedom in making the administrative decisions.
- Increased levels of transparency in government transactions.

#### 5.2.2.2. Cultural factors

Cultural factors are those factors related to the shared knowledge and values of the society. The following factors are classified under the cultural category:

- Limitation of internet skills and e-culture.
- Unacquaintance of the existence of e-government in Jordan.
- Lack of trust in e-services (preferring traditional or paper based methods).
- Educational level.

#### 5.2.2.3. Social factors

Social factors are those factors related to the life, welfare, and relations of human beings in the society. The following factors are classified under the social category:

- Using e-government service eliminate or limit the role of favoritism.
- Limited access for computers and internet from certain social groups including elderly and people with special needs.
- Geographic location of the user.
- Age rang of the user.
- Gender of the user is an important factor for using e-government integrated services.
- Use of e-government services and the ability to complete transactions from home weakens the social bonds in the society.

#### 5.2.2.4. Political factors

Political factors are those factors related to the structure or affairs of governments and their politics. The following factors are classified under the political category:

- A clear vision and continuous support from highest political levels for implementing service integration in e-government.
- Enhancements of democratic practices by introducing modern e-services like e-voting and ability to communicate directly with people in charge through e-mails and other useful tools.
- Unstable political situation in the region.
- Effective political support needed to speed up all operations and activities related to the development of service integration.

#### 5.2.2.5. Legal factors

Legal factors are those factors related to the laws or legislations that control service integration in e-government implementation. The following factors are classified under the legal category:

- No enough rules and regulations.
- Not clear rules and regulations.
- Public awareness of relevant rules and regulations.
- Continuous updates for relevant rules and regulations.
- Availability and accessibility of relevant rules and regulations.

#### 5.2.2.6. Technological factors

Technological factors are those factors related to technology or involving technology aspects. It is important to study and examine the effects of new technologies and modern architectures on the role of service integration in e-government implementation in Jordan. A significant number of such technologies might be including but not limited to micro services, serverless computing, containers, unit testing, mobile deployment, cloud computing and speech recognition.

All these technologies can contribute significantly in advancing the progress of service integration in e-government implementation and provide creative solutions that help overcoming current obstacles and challenges.

However, our research focus is understanding the role of service integration in e-government implementation in Jordan based on the perspectives of providers and users of e-government services, and because our investigation of critical factors affecting service integration is general and comprehensive, it is very recommended to conduct

more in-depth research around other relevant technologies and structures in the future research.

The following factors are classified under the technological category:

- Difficulty for the government agencies to identify the identity of the users and their eligibility to obtain a specific service.
- Safety and security of sharing and transferring data online among different government agencies.
- Interconnection between various information systems of different government agencies.
- Insufficient infrastructure including software, hardware and network technologies.
- Frequent failure or malfunctioning of software, hardware and other required tools and devices.
- Frequent delays in fixing errors and malfunctions of software, hardware and other important tools and devices.
- Frequent delays in updating information.
- Difficulty in performing e-payments due to the lack of technical requirements such as networking and security.
- Shortage of experienced programmers and qualified staff in government agencies.

#### 5.2.2.7. Economic factors

Economic factors are those factors related to an economy or finance aspects. The following factors are classified under the economic category:

- High cost of infrastructure including software, hardware and network technologies.
- High cost of development and implementation of integrated service.
- High cost of regular maintenance and technical support for infrastructure required to sustain service integration.
- High cost of training government employees involved in the development and implementation of service integration.
- High cost of marketing and spreading awareness of service integration among the people in the society.
- High cost of owning personal computers and smart phones for citizens.
- High cost of internet subscription for citizens.
- low-income of citizens decreases the adoption and use of e-government services.

### 5.3. Summary

Our research model and its main constructs were proposed in this chapter. Main constructs of the model are the current situation and the critical factors that are mainly affecting the role of service integration in e-government implementation in Jordan. Based on our theoretical and empirical investigations, those factors were categorized into seven main groups: managerial, cultural, social, political, legal, technological and economic.

Next chapter introduces the research methodology used in this study to test and validate the constructs of the research model.

## Chapter 6: Questionnaires

### 6.1. Introduction

In the previous chapter, a research model for understanding the role of service integration in e-government implementation in Jordan was introduced based on the findings of interviews that were conducted with experts and specialists in e-government domain in Jordan.

In this chapter, the model is tested and validated using the quantitative approach to support the findings of qualitative approach that are presented in chapter 4.

Section 6.2 discusses the design and development of the questionnaire. Section 6.3 addresses the questionnaire specialized review process. Section 6.4 presents the conducted pilot studies. Section 6.5 examines validity and reliability of the questions. Section 6.6. describes the conducted survey questionnaire. Section 6.7. provides justification for selecting the sample. Section 6.8. presents the main constructs, themes and questions. Section 6.9. addresses major challenges and difficulties occurred during design and development of the questionnaire. Final section 6.10 summarizes the chapter.

### 6.2. Questionnaire design and development

The methodology implemented in this study has two key stages combined together to support the concept of mixed method approach.

In the first stage, qualitative data collected through interviews was used to develop the research model. In the second stage, quantitative data collected through questionnaires was used to verify the research model and validate its constructs.

The purpose of mixing both qualitative and quantitative methods is to provide full understanding of the role of service integration in e-government implementation in Jordan in-depth and breadth at the same time. The depth investigation of the research topic is guaranteed through the qualitative part of mixed method approach by interviewing a small group of experts who are able to provide rich information regarding the subject. The breadth investigation comes from surveying a large number of providers and users of e-government services using questionnaires.

The aim of this chapter is to describe the collection and analysis of the quantitative data. Therefore, two pilot studies were conducted before applying massive data collection through the main questionnaire with the aim of examining both the validity and reliability of the questionnaire. The justification for the methods and procedures used to distribute the questionnaires and collect the data is introduced later in this chapter and analysis of the collected data is presented in the next chapter.

The questionnaire is selected as the most appropriate quantitative method to test and validate the research model which is one of the significant outcomes of this study. The questionnaire method has been applied in the context of this study because it has many advantages over other quantitative techniques. It has the ability to reach large numbers of responses with more convenient ways that save effort, cost and time. It also has the possibility to generalize the findings and results to be useful in similar contexts with similar conditions.

As a starting point, all model constructs extracted from the interviews during the qualitative phase were examined and refined. They are then rewritten in form of questions that can be easily understood by the target audience.

The first draft of the questionnaire was reviewed by a group of specialists in relevant domains to thoroughly evaluate the questionnaire design and content. The first draft of the questionnaire consists of two parts: the first part contains six demographic questions

and the second part contains eight sections which are related to the following constructs of the research model: current situation, managerial, cultural, political, legal, technological and economic factors.

A five-point Likert scale was selected to measure the responses of participants in this study. Participants were required to select one of the following options to show their agreement or disagreement with each statement: strongly agree, agree, neutral, disagree, or strongly disagree.

The overall questionnaire was written in English and then translated by the researcher to Arabic, the native language of the participants. This translation was sent to an English - Arabic translator who checked and reviewed the translation and made the suitable amendments in regard to grammar, spelling, wording and meaning.

The resulted Arabic version was reviewed again by a specialist in Arabic Language for grammar, spelling, wording and meaning before examined again by the researcher and English – Arabic translator to make sure it still has the main concepts and ideas required to achieve the goals and objectives of the questionnaire.

After reviewing the language and contents of the Arabic draft of the questionnaire, it was sent to expert reviewers to give their specialized feedback, the questionnaire was then revised to take their comments in consideration and additional revision for Arabic version was made by a specialist in Arabic Language before the final copy is translated into English language by another Arabic - English translator.

### 6.3. Questionnaire specialized review:

The questionnaire went through a thorough reviewing process in order to check its external validity by seventeen experts and specialists in relevant areas before being distributed to the targeted audience. The reviewers were selected based on their skills,

experience, research, publications and actual involvement in e-government implementation in Jordan.

The reviewers can be categorized into the following three groups based on their specialization or background: research methods, computing and business.

A major challenge for sending the questionnaire to seventeen high level officials in e-government domain in Jordan was the difficulty of reaching and communicating with them in order to introduce the research idea and explain their significant role in this study. In order to motivate them to take part in the study and to allocate sufficient time needed for thorough and careful evaluation of the questionnaire despite their busy schedules, the researcher put great efforts in communication and arranging meetings with those reviewers to take their approval and guarantee their productive participation in reviewing process.

An official cover letter from Sheffield Hallam University signed by Director of Studies for this research was circulated to all reviewers asking them to cooperate and facilitate the work of the researcher by providing all kinds of assistance.

Another cover letter written by the researcher was given to the reviewers with a draft version of the questionnaire. This cover letter offers more details about the nature, significance of the research, objectives, questions, methodology and expected outcomes. Also, it contains the contact details of the director of studies and the researcher in case of any additional information or further explanation are needed.

The main focus of the researcher in this stage was concentrated on building a good relationship with the reviewers to ensure that their feedback is received in a proper time to meet the estimated timeline of the research.

The researcher utilized telephone calls, e-mails and several social media platforms including LinkedIn, Twitter and Facebook to regularly communicate with the reviewers and to send them gentle reminders about the importance of their feedback and critical

nature of the time for this study. However, some reviewers took additional time to complete the evaluation and send their feedback and comments, which had a negative impact on the overall progress of the research and caused some delays in conducting the research.

The big number of experienced reviewers offers a great assistance in creating a new version of the questionnaire with better design, structure and content. It also eliminates any drawbacks or weaknesses.

Their feedback was very comprehensive through reviewing all sections and their related questions one by one taking into consideration many aspects regarding the language used, the clarity of concepts, belonging to the main construct, possibility to be measured using statistical tests. Their feedback was useful in confirming the appropriateness of Likert scale used in the questionnaire.

Some reviewers suggested deleting a few questions either because they appeared to be out of the scope of the study or because the same idea was covered in another section of the questionnaire. Others suggested deleting or modifying questions that might be confusing or ambiguous to the reader.

Some reviewers recommended moving a question or two from one section to another such as moving the question about the effects of level of income on the use of e-government integrated services from technological section into economic section.

Some reviewers suggested adding more questions to some sections such as political and social sections since they seem to have a little number of questions. The new questions utilized in assuring accuracy, correctness and flexibility of the collected data so that it can be smoothly measured and analyzed in simple ways using different statistical techniques.

General tips and comments were also provided to improve the clarity and readability of the questionnaire such as rewording some questions to avoid vagueness and confusion,

adding titles and section headings for each group of questions under the same category and rearranging the questions to ensure that the participants can easily follow the sequence of questions and fully understand their logical order. Any questions that were not applicable or not suitable to be answered by both sides (providers and users) were removed.

As a result, a well-written, well-designed and well-organized questionnaire is developed and prepared for distribution to a limited number of participants in order to check its validity and reliability in the real world before starting the massive data process.

#### 6.4. Conducting pilot studies:

Two pilot studies were conducted to explore the responses of providers and users of e-government services and to ensure the questionnaire is capable to accurately obtain their perceptions about the role of service integration in e-government implementation in Jordan.

The first type of survey was a paper based questionnaire targeting to test the questionnaire design, clarity of language, sequence of questions, possible methods of distribution and collection, and the time needed to complete a response by a participant.

The second type was a web-based questionnaire that was aimed at testing validity and reliability of the research instrument using statistical tools such as analysis of Cronbach's Alpha and calculating its root square. A brief description of both pilot questionnaires is presented in the next two sub sections.

#### 6.4.1. First pilot study (paper-based questionnaire):

After confirming external validity of the questionnaire by seventeen experts of e-government in Jordan, a pilot study in the form of paper-based questionnaire was conducted on a sample of forty participants including ten providers and thirty users of e-government services to test and evaluate all aspects of the questionnaire before applying the massive data collection in the real-world.

The sample representing the participants from the providers' side was selected by the general manager of Public Administration Institute (PAI) where all the participants are government employees who are aware of e-government projects and available services in Jordan. The sample representing the participants from the users' side was selected by the dean of King Abdullah II School for Information Technology at University of Jordan where the students, academic and administrative staff are interested and familiar with the topic.

The aim of such pilot is to take participants' feedback and evaluate the possibility and applicability of conducting the actual study in addition to measure its constructs. Also, it aims to spot any weaknesses, issues, errors, problems or difficulties in order to eliminate them before doing a lot of core work in the actual study. The procedure that was employed in this pilot followed the major steps suggested by Peat, Mellis and Williams (2002) as described earlier in chapter three.

As a result of this pilot, only a few modifications for the design and contents of the questionnaire took place based on the feedback reported by the participants. The average time reported to complete the questionnaire by the majority of participants was about eight to ten minutes which is considered reasonable and satisfactory.

During the pilot study, there was a frequent request to have an online questionnaire which led us to conduct a web-based pilot study in order to save time, effort and cost,

and to overcome the difficulties and challenges that influenced the first pilot including distribution, collection and modification.

Since we started with a very small sample with no plans to be statistically analyzed, the first pilot was only intended to refine questions and prepare the questionnaire for a second round. Therefore, a second pilot study was required to confirm the reliability and validity of the research instrument using statistical techniques such as analysis of Cronbach's Alpha.

#### 6.4.2. Second pilot study (web-based questionnaire):

One of the major challenges for conducting a paper-based questionnaire was the ability to conduct large scale questionnaire in person because it needs a huge amount of time, effort and cost. Therefore, a web-based survey was the solution. The next section provides a brief comparison of paper-based questionnaire and web-based questionnaire and the rationale for why the use of a web-based questionnaire was selected instead of a paper-based questionnaire.

An online pilot on a sample of forty participants including ten providers and thirty users of e-government services was carried out to test applicability and possibility of applying web based questionnaire to collect the massive data in the main quantitative phase.

The selection of the sample was the same as in the first pilot where the sample representing the participants from the providers' side was selected by the general manager of PAI and the sample that is representing the participants from the users' side was selected by the dean of King Abdullah II School for Information Technology in the University of Jordan where the students, academic and administrative staff are interested and familiar with the topic.

Also, the same procedure suggested by Peat, Mellis and Williams (2002) that was used in the first pilot study still applicable in the second pilot study with minor adjustments to utilize a web-based questionnaire instead of a paper-based questionnaire.

Google forms were used to convert the paper-based questionnaire into a web-based questionnaire to be used in the second pilot study. The link for the questionnaire was circulated into selected participants via e-mails and different social media networks such as WhatsApp and Facebook.

After receiving all responses from the participants, data were imported into SPSS software in order to check the validity and reliability of the research instrument and its constructs. More details about statistical tools used to test validity and reliability of the research instrument is introduced in the next section.

#### 6.5. Validity and reliability

According to Patton (2014), testing the validity and reliability of the selected research instrument is an essential step for study design, data collection, data analysis and all other stages of the research. Therefore, data from the pilot study was used to assess the validity and reliability for all constructs in the questionnaire.

A valid measure is the measure with the ability to measure accurately the construct that it was originally assumed to measure, and a reliable measure is the measure with the ability to produce consistent results every time it is performed (Shaughnessy, Byers and Walsh, 2011).

Using SPSS software, validity and reliability were calculated by means of statistical tests such as analysis of Cronbach's Alpha and calculating its square root. the validity of the constructs was assessed by calculating the square root of Cronbach's Alpha in order to ensure that the measures are appropriate and provide satisfactory results. On

the other hand, the reliability of the constructs was tested by analyzing Cronbach's Alpha (Kothari, 2009).

Table 6.1 shows the results of the tests for both validity and reliability to show that the research instrument is statistically valid and reliable.

Table 6.1: Validity and Reliability assessment for the questions.

Number of questions	Cronbach's Alpha (Reliability)	Square Root of Cronbach's Alpha (Validity)
58	0.757	0.870

The value for the square root of Cronbach's Alpha is 0.870 which is greater than 0.70 for all constructs in the study which means a high validity is statistically confirmed.

Similarly, the value for Cronbach's Alpha is 0.757 which is greater than 0.70 for all constructs in the study which means a high reliability is statistically confirmed.

Therefore, validity and reliability for all questions were confirmed and the questionnaire is ready for distribution and massive data collection process can be started as explained in the following subsequent section.

#### 6.6. Conducting a large-scale survey questionnaire:

The quantitative stage of this study uses a survey to investigate the research questions and test the proposed research model. There are many factors affecting the decision of what method should be used to administer the survey like costs, coverage of the target population, flexibility of asking questions, respondents' willingness to participate, the accuracy of responses and the ability to generalize the results.

Generally, the most popular means of survey administration are telephone, post mail, in person at home, mall or street, and online over the internet. More than one method can

be used together in the same research, but most common type of surveys used in research is the questionnaire because it saves time, effort and money (Mellenbergh, 2008).

The questionnaire is a research instrument consisting of a number of questions aiming to gather some information on a certain topic from a group of respondents (Field, 2016).

The questionnaire must be designed carefully, effectively and efficiently in order to provide satisfactory, accurate and valuable results and to produce valid and reliable demographic variable measures and should yield valid and reliable individual disparities that self-report scales generate (Shaughnessy, Byers and Walsh, 2011).

The questionnaire can be distributed by means of traditional paper based or online web based. Paper based questionnaire is the questionnaire that collects the required data from designated participants using traditional paper-based methods with no internet access. However, online questionnaire collects required data from designated participants over the internet using the tools of information and communication technologies such as personal computers and smart phones.

Both forms of survey have their own strengths and weaknesses. Selecting the most appropriate one for this study was based on several aspects such as speed, cost, accuracy, flexibility and reaching the target populations.

Usually, web based questionnaire is faster and easier to apply than paper based questionnaire due to the automated nature that collects data automatically at anytime from anywhere in reasonable time through convenient ways while paper based questionnaire needs more efforts and arrangements to distribute and collect the completed papers.

Correspondingly, the cost of administering paper based questionnaire is more expensive than the cost of administering web based questionnaire because it needs more money to buy papers and to pay for printing and photocopying services in addition to other

related issues such as the cost of transportation. Another important point is the preferences of participants themselves whether they prefer a web based or a paper based questionnaire.

It is good to have a well-prepared questionnaire that fulfill the requirements of the study by meeting the main objectives and answering the research questions but the most important thing that matter is willingness of the target population to take part in the survey and fill in the questionnaire.

One of the major advantages of web-based questionnaire compared to the paper based is easiness of making corrections and amendments without having to reprint as in the paper-based questionnaire. On the other hand, one of the major advantages of paper based questionnaire compared to the web based is the direct contact with the target population that leads to increase the response rate while publishing a URL links through some websites or circulating them through e-mails cannot increase the responsiveness of the target population.

One of the big disadvantages of a paper-based questionnaire is the difficulty of collecting responses anonymously because the paper based questionnaire is distributed in person in most cases, so the participants might be impressed or uncomfortable to give accurate answers while participants will be free of any pressures while answering online questionnaires at their convenience.

In addition to what mentioned above, there is an issue of data entry, which is one of the biggest drawbacks of paper-based questionnaire that might hinder the overall progress of the research where the target population is huge. On contrary, a web based questionnaire stores data automatically into database system in a format that is suitable for exportation to any preferred analysis software such as SPSS without any kind of interference from the researcher or other people. Flexibility in design and layout with

many variations of options to be more user friendly appeared in the online questionnaire.

However, paper based questionnaires undoubtedly still have their noteworthy characteristics that distinguish them from web based questionnaires and secure their place in the domain of survey research even that continuous expansions in information and communication technologies may have negative impacts on their role in the future because more and more people are preferring to use web based questionnaire for numerous benefits they offer.

In its turn, this study is not an exception and the use of web-based questionnaires can be more useful than paper-based questionnaires in the context of this study for the following reasons:

The target population is only the people who have access to the internet from both University of Jordan and MoICT. Those people are expected to have a high level of digital literacy and can be considered actual online users. Offline users who have inadequate level of digital literacy with no internet access are out of the scope of this study.

The time is very critical in this study because it is a PhD research that needs to be conducted in a limited time, so the web based questionnaire can be seen a useful tool that saves time needed to design, distribute, collect and analyze the questionnaire.

The effort to conduct a survey is reduced extremely using a web based questionnaire comparing to the paper based questionnaire in terms of amount of work needed to execute and manage the survey where all operations can be done automatically through designated surveying software over the internet. For example, no need to move from one place to another to distribute and collect questionnaires from target population.

The cost of preparation and distribution of paper-based questionnaire is a key factor that is encouraging the use of web-based questionnaires in an attempt to reduce the cost of papers, transportations, entering and analyzing the data.

The ability of a web based questionnaire to reach a large sample and increase the number of participants because the URL links of the questionnaire can be circulated easily, quickly and smoothly to a huge number of participants through websites of involved organizations and their internal e-mailing systems. Because of these fast distribution abilities, the sample population can respond almost instantly. A web-based questionnaire can be automatically monitored and the progress of collection is reported immediately.

Web based surveys support the flexibility of creating a questionnaire with a significant set of design options including a large set of question types such as multiple-choice questions or open-ended questions, features of graphical user interface such as scroll bars and navigating options in addition to various fonts and colors available.

A web-based questionnaire was built using Google forms platform which is a free tool offered by Google to create online surveys that can be published to all participants in simple and easy ways. It also stores all responses in a database that can be retrieved and downloaded easily into spreadsheets and provides demonstrating charts and graphs with useful summaries about the collected data (Curts, 2017).

Google forms platform offers many benefits compared to the paper based questionnaire including saving money since no papers or transportation cost applies, using Google forms is free of charge, working online is more convenient with user friendly formats and designs, more suitable to educated participants who are familiar with internet, no interference from the researcher where the participants fill the questionnaire completely on their own to avoid bias, privacy and anonymously guaranteed since no names were requested or even any kind of direct contact with the researcher, available any time,

accessible from anywhere, reach large samples an population, responses are directly transferred and stored into spreadsheets, response rate can be checked and observed regularly, initial results and statistics can be generated automatically and saving the time and effort of the researcher (Curts, 2017).

Therefore, an online questionnaire is the main method of data collection in this research. It was used to test, validate, confirm and support the proposed research model introduced in chapter five and to provide answers to the main research questions regarding the current situation and various factors affecting the perceptions of providers and users of e-government services about the role of service integration in e-government implementation in Jordan.

According to Shaughnessy, Byers and Walsh (2011), a trustworthy questionnaire that will produce valid and reliable results require knowing the type of information that need to be collected, deciding the method of conducting the questionnaire, preparing the first version or draft of the questionnaire, revising the shape and contents of the questionnaire, pretesting the questionnaire and finally, editing the questionnaire and specifying the procedures for its use.

Based on this, the questionnaire used in this study was designed as detailed in the following paragraphs: The questions were designed to be relevant to the main aim and objectives of the study and helped answering the main research questions (see chapter one).

The first section of the questionnaire contains the questions related to the demographic information about participants. The second section contains eight subsections that reflect the objectives of the study and provide answers to the main questions (Appendix 5 presents English version of the questionnaire after translation from Arabic into English and appendix 6 presents the original Arabic version of the questionnaire).

The reviewers offered a significant assistance in this regard by examining the links between research objectives and questions against the proposed draft of the questionnaire. (Appendix 4 shows an Arabic version of the questionnaire's evaluation form that was sent to reviewers).

Another important issue is the length of the questionnaire and the time needed to complete a response by the participant. Despite the large number of questions included in the questionnaire (six questions about demographics and fifty-eight questions about critical factors), the questions were written in a way that helps the participant to complete a response in not more than ten minutes. This encourages participants to complete the questionnaire and answer all the questions.

The multiple-choice option was selected, and the open-ended questions were avoided while writing the questions. The time needed to complete a questionnaire was tested during the first pilot study and the remarks mentioned by participants were taken into consideration, so the wording and sequences of some questions has been amended and few questions were removed from the questionnaire. The clarity and readability of the questions were improved by dividing the questions into sections and sub sections according to their contents and the construct they measure.

As a result, participants are able to read, understand and answer the questions easily in a simple way without any kind of confusion or misunderstanding.

Participants' feedback through the conducted pilot studies was very useful in rewriting, rearranging and rewording the questions in the most convenient ways that encourage the participants to fill out the questionnaire with interest and curiosity. Thus, the outcome is a questionnaire that has the ability to efficiently and effectively measure the main constructs of the proposed model based on experts' feedback through their valuable reviews and based on participants' feedback through their comments and remarks from both the first and the second pilot studies.

## 6.7. Selecting the sample:

Selecting an appropriate sample is one of the most critical issues of any survey. From statistical point of view, it is important to select the sample that perfectly represents the population correctly and accurately in order to acquire useful, valid and reliable data that can be generalized to all elements in the population (Dudovski, 2013).

Since this research aims to examine the perceptions of providers and users of e-government services, the sample for each group is different. The sample for the users is drawn from the population of the University of Jordan which includes students, faculty and staff because they have internet skills that enable them to use e-government services and to respond effectively to the questions.

The University of Jordan population is a diverse community resembling the entire educated Jordanian society covering all geographical areas, education levels, ages, genders, income levels and specialization. In this study, educated or literate users are those who have internet access and can go online to use e-government services. The only exception is the limitation mentioned in the first chapter regarding the non-online users who are excluded from the study.

The sample representing the providers is drawn from employees in the Ministry of Information and Communication Technologies because the ministry is responsible for managing and administering the e-government program in Jordan and its employees are responsible for developing and delivering all e-government services through a series of planned projects and activities. Therefore, the employees of the MoICT are chosen to fill out the questionnaire since they are familiar with e-government services and related issues. Their perceptions concerning the benefits, challenges, and progress of service integration in e-government implementation and the development of integrated services

are taken into consideration to obtain required information about current factors affecting service integration in e-government implementation in Jordan.

The required approvals to officially publish the questionnaire on the MoICT website and to distribute the questionnaire individually to all employees in the ministry through the information technology department in the ministry to encourage them to take part in the study and to have a say regarding the role of service integration in e-government implementation in Jordan. The same was done on the users' side where the required approvals were also taken in advance to officially publish the questionnaire on the official website of University of Jordan and make the questionnaire available for all students, academic and administrative staff in the university in addition to send them a link of the questionnaire individually through the computer center in the university in order to encourage people to take part in the questionnaire and to have a say regarding the role of service integration in e-government implementation in Jordan.

The web based questionnaire was created and hosted online by Google Forms platform. The responses were collected during the fall semester in the 2016/2017 academic year from the beginning of September until the end of December.

#### 6.8. Main constructs, themes and questions

As mentioned previously, the questionnaire has two parts: the first part contains six questions to measure demographic characteristics of participants in regard to their gender, age, education level, internet and information technology skills, daily rate of internet use and rate of using e-government services. The second part contains eight sections representing the main constructs of the proposed research model: current situation, managerial factors, cultural factors, social factors, political factors, legal factors, technological factors and economic factors. Each section contains a set of

questions that measure the perception or understanding of participants for the construct it represents. The total number of questions in all eight sections are fifty-eight questions.

#### 6.9. Major challenges and difficulties:

The questionnaire design and development process went through a comprehensive and systematic course of enhancements through different stages to confirm its validity and reliability. Confirming validity and reliability of the questionnaire includes checking face validity by interviewees from the first qualitative stage, checking content validity by expert judges in the field, conducting two rounds of pilot studies on convenient samples, checking construct validity and reliability using statistical tests such analysis of Cronbach's Alpha and calculating its square root.

However, some difficulties emerged during the distribution and collection of the questionnaire putting pressure on the researcher regarding time, effort and cost. The following are the major difficulties faced in the quantitative part of this study:

- Lack of the culture of participation in the questionnaires and scientific research among people in the country.
- Bureaucratic and rigid procedures to obtain official approvals from designated authorities in the country to take part in the study.
- Difficulty in reaching the expected number of participants within the limited time allocated to complete the study.
- Technical problems related to online questionnaire such as support of Arabic language and compatibility issues in the software platform that was selected to create and develop the questionnaire online.

- Big delay due to the long time taken by some judges and reviewers to provide their feedback and comments about the questionnaire.
- Worries and doubts of many participants regarding the privacy and security issues that prevent them from taking part in the study.

#### 6.10. Summary:

This chapter described the quantitative strategy used in the second part of mixed method approach employed towards understanding the role of service integration in e-government implementation in Jordan. It provides a justification for all steps and procedures selected to test and validate the proposed research model.

The following subjects were discussed: questionnaire design and development, questionnaire specialized review, conducting paper based and web based pilot studies, validity and reliability, conducting large scale survey questionnaire, selecting the sample, main constructs, themes and questions and major challenges and difficulties.

The next chapter presents quantitative results of this study.

## Chapter 7: Quantitative results

### 7.1. Introduction

Chapter five proposed a research model for this study. In order to validate it, a large-scale survey was conducted to collect quantitative data as detailed in chapter six. In this chapter, the results of the large-scale survey are presented and discussed. Statistical analysis of the collected data is presented using popular statistical techniques like Means, Medians, Chi squared, and Mann Whitney U test.

The data was analyzed using the Statistical Package for the Social Sciences (SPSS), which is one of the most powerful versatile software, that offers a wide variety of computerized tools to handle the complex statistical analysis of quantitative data. It has the ability to manipulate huge amounts of data in a timely manner and perform a wide range of statistical procedures including data entry, data modification, data analysis, creating tables, producing graphs and generating charts to demonstrate findings in readable and understandable ways through reports and presentations (Field, 2013).

The second section 7.2 considers the preparation of data for analysis process and the third section 7.3 presents analysis for descriptive data of demographic characteristics including gender, age, educational level, internet and information technology skills, daily use of internet and average use of e-government services. Results of inferential data and statistical tests were presented in the fourth section 7.4.

### 7.2. Preparing data for analysis

In this chapter, a detailed description is provided for data analysis and procedures that carried out to test and validate the proposed research model keeping in mind the main

aim of the study which is understanding the role of service integration in e-government implementation in Jordan from different perspectives of providers and users of e-government services.

The main research model is confirmed based on the analysis and interpretation of the responses obtained by a large-scale questionnaire that was tested using different statistical techniques with support of SPSS software.

As a starting point, it is important to prudently check, edit and clean the collected data from any errors before starting data transformation process into a suitable format, ready to be imported into SPSS. Also, it is very important to import the collected data into SPSS carefully and correctly to make sure no data are missing or corrupted in the transformation process.

All variables and constructs of the questionnaire must be defined clearly and accurately to obtain correct results bearing in mind there are eight independent variables (current situation, managerial, cultural, social, political, legal, technological and economic factors) and one dependent variable (role of service integration).

Another important issue that needs to be taken into account when entering data into SPSS and before starting data analysis process is the score reversing of “negatively keyed questions”, since the questionnaire contains a mixture of both kind of questions “positively-keyed” and “negatively-keyed”. SPSS software was used to reverse-score negatively keyed questions.

### 7.3. Descriptive statistics and demographic characteristics

This section presents demographic characteristics and descriptive statistics for all responses from the participants whether they are providers or users in order to

contribute to the efforts of understanding the role of service integration in e-government implementation in Jordan according to their perspectives.

Six demographic questions regarding gender, age, educational level, IT and internet skills, daily use of internet and average use of e-government services were asked. The demographics and characteristics of all respondents were analyzed to provide analytical statistics that are useful in making a comparison between providers and users in order to identify the nature and attributes of participants from both sides (providers and users). Therefore, any similarities or differences between the two groups were highlighted and explained in the light of SPSS results. The total number of respondents in the whole study was 642; 90 (86 %) of them were providers and 552 (14 %) were users as shown in table 7.1.

Table 7.1: Distribution of responses between providers and users.

Sample distribution	Providers	Users	Total
Number	90	552	642
Percentage	14%	86%	100%

Figure 7.1 illustrates the distribution of responses for the entire sample between providers and users.

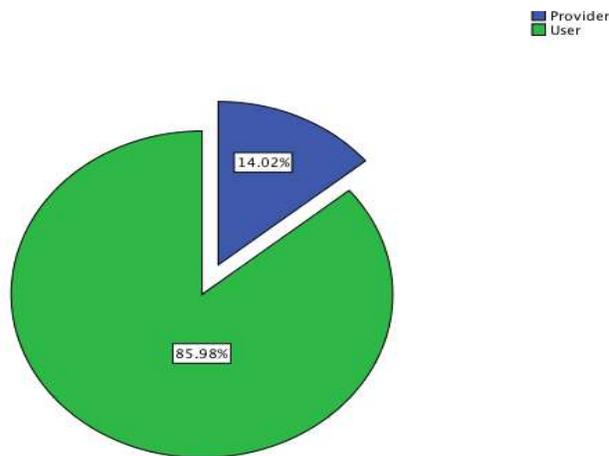


Figure 7.1: Sample's distribution by the type of respondents

The demographic information obtained from analyzing the collected data provides a broad picture of the two selected samples and allows more understanding of their characteristics. SPSS was used to obtain the statistical distributions of the samples against six demographic characteristics for providers and users. It also provides graphical illustrations that utilize graphs, charts and tables to explain frequencies and percentages. The analysis of descriptive statistics and demographic characteristics of respondents are presented in the following subsections.

### 7.3.1. Gender

The total number of respondents in this study is 642. 222 of them were males (34.6%) and 420 were females (65.4%). The sample for providers consists of 47 (52.2%) males and 43 (47.8%) females, and the sample for users consists of 175 (31.7%) males and 377 (68.3%) females.

Table 7.2 shows the gender distribution of respondents where the number of males is 222 (34.6%); 47 (21.8%) were providers and 175 (78.2%) were users, and the number of females is 420 (65.4%); 43 (10.2%) were providers and 377 (89.8%) were users.

Table 7.2: Distribution of respondents by gender.

Gender Distribution	All		Providers		Users	
	Number	642		90		552
	Male	Female	Male	Female	Male	Female
	222	420	47	43	175	377
Percentage	100%		14%		86%	
	Male	Female	Male	Female	Male	Female
	34.6%	65.4%	52.2%	47.8%	31.7%	68.3%

Figure 7.2 illustrates the distribution of the whole sample by gender for all respondents whether they are providers or users.

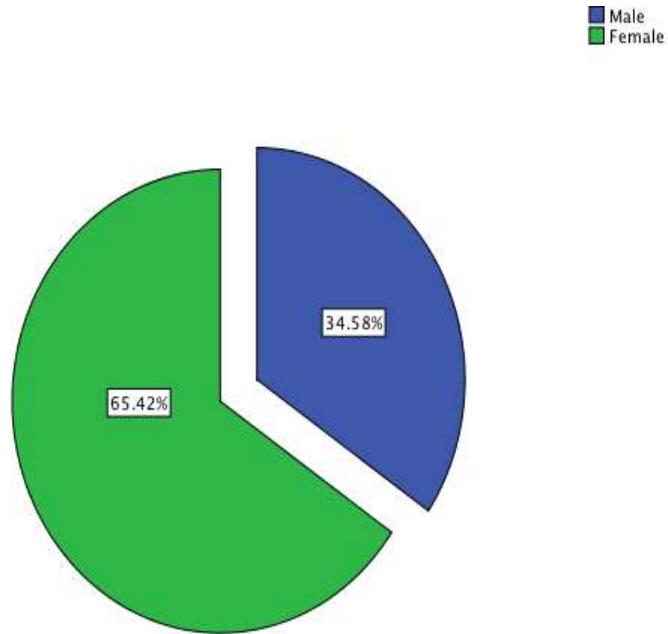


Figure 7.2: Respondents distribution by gender

Correspondingly, figure 7.3 and 7.4 respectively show the distribution by gender for providers and users.

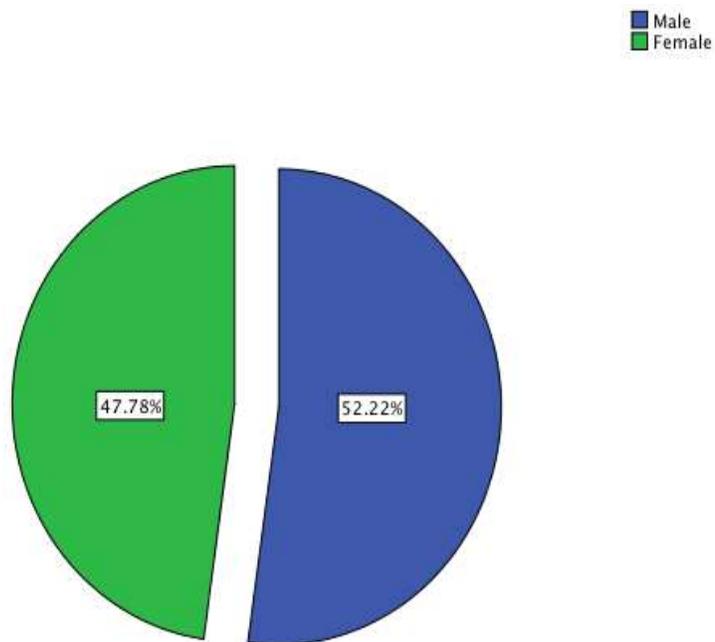


Figure 7.3: Providers distribution by gender

Male  
Female

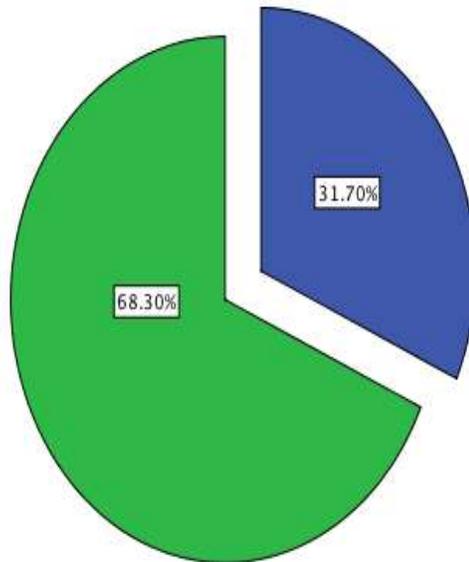


Figure 7.4: Users distribution by gender

It can be seen from the table and figures above that the percentage of females is higher than the percentage of males. This can be explained by the fact that the questionnaire was distributed to all members of the sample without any kind of control over the gender of respondents.

The number of females is three times the number of males because the respondents from users' side are about 86 % of the whole sample and females are about 68.3% of this percentage. In fact, this reflects the real distributions of males and females in the university of Jordan where the number of females is about three times the number of males since the majority of respondents were students.

Another reason is the conservative nature of the Jordanian society and its traditions that reflects some cultural and social considerations. Females were more interested in using e-government services rather than males because they will be able to conduct the transactions themselves without the need to ask someone of their male relatives to go

with them or to do the services on their behalf in the same old-fashioned way of obtaining government services.

However, the respondents from providers' side are employees of MoICT and the percentage of both genders for males and females are almost the same which is similar to the real distribution in the real world.

### 7.3.2. Age:

The second demographic variable is the age. The total number of respondents in the whole study was 642, their responses were categorized into three groups based on their age distribution: the first group includes all respondents who are less than twenty-six years old, the second group includes all respondents between twenty-six and fifty years old and the last one includes all respondents who are more than fifty years old.

Table 7.3 shows the total number of respondents in the whole study and their distributions according to age of providers and users where the number of respondents in the first category (less than twenty six years old) was 452 (70.4%); 10 respondents (11.1%) were providers and 442 respondents (80.1%) were users. The number of respondents in the second category (between twenty six and fifty years old) was 176 (27.4%); 75 respondents (83.3%) were providers and 101 respondents (18.3%) were users. As well, the number of respondents in the third category (more than fifty years old) was 14 (2.2%); 5 respondents (5.6%) were providers and 9 respondents (1.6%) were users.

Table 7.3: Distribution of all respondents by age.

	Option	Number	Percentage (%)
All	Less than 26	452	70.4
	Between 26 and 50	176	27.4
	More than 50	14	2.2
	Total	642	100.0
Providers	Less than 26	10	11.1
	Between 26 and 50	75	83.3
	More than 50	5	5.6
	Total	90	100.0
Users	Less than 26	442	80.1
	Between 26 and 50	101	18.3
	More than 50	9	1.6

Accordingly, figure 7.5 shows the distributions of the entire sample by age for all respondents whether they were providers or users. Figures 7.6 and 7.7 respectively show the distributions by age for the two samples of providers and users.

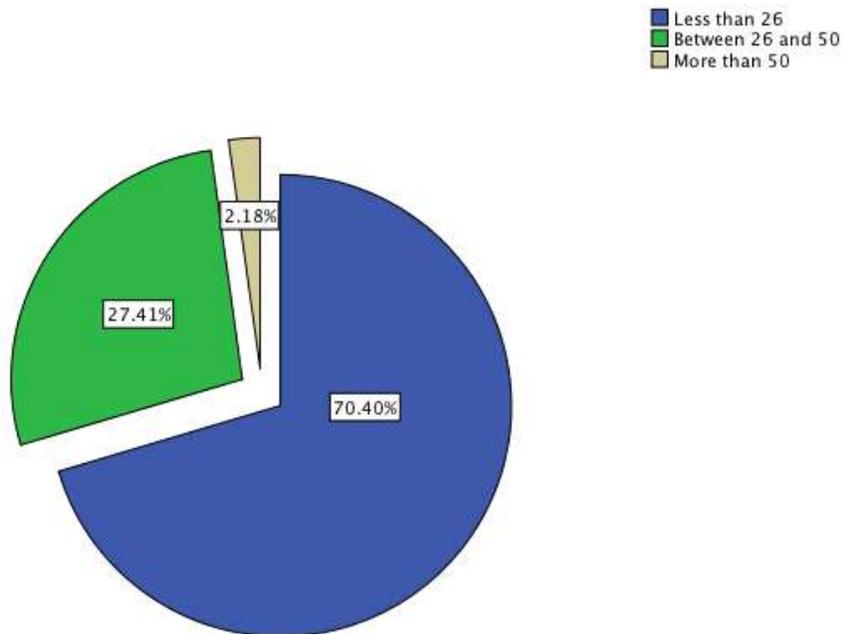


Figure 7.5: Respondents distribution by age

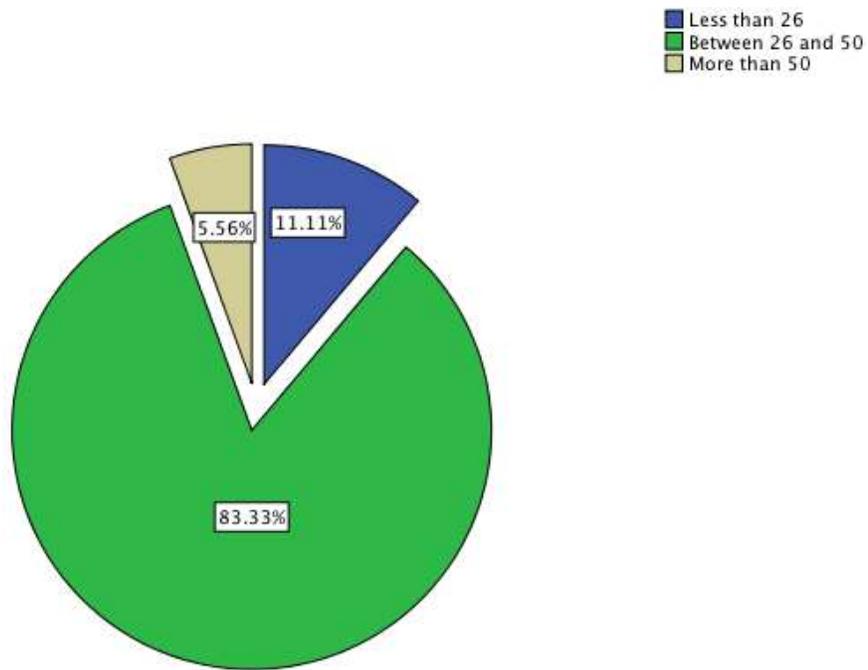


Figure 7.6: Providers distribution by age

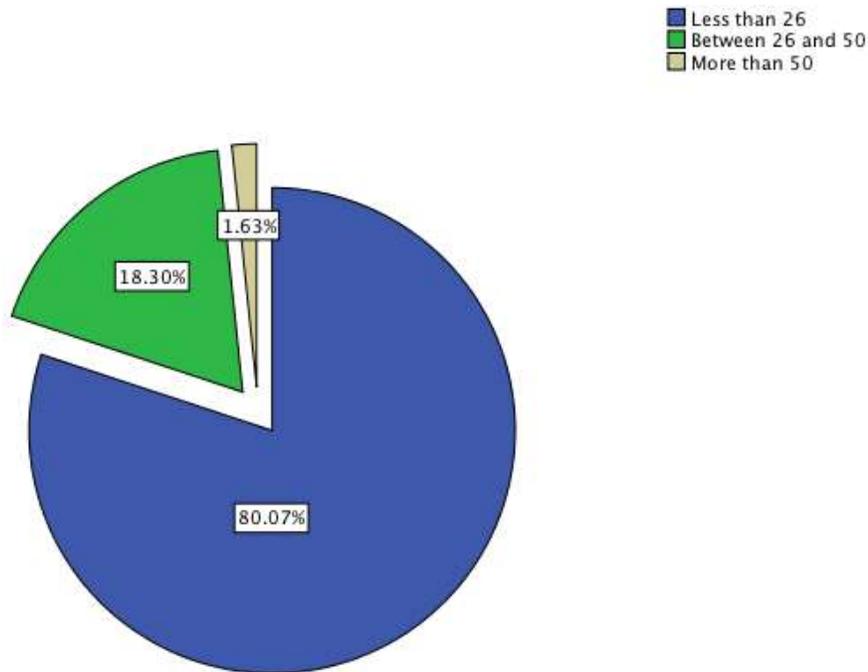


Figure 7.7: Users distribution by age

It is clear from the table and figures above that the majority of respondents were categorized under the first age group (less than twenty-six years) with 70.4% of the entire population. The second age group (between twenty-six and fifty years) comes

second with 27.4% of the entire population and third age group is (more than fifty years old) last with only 2.2% of the entire population.

The reason that can be given to explain such results is that the reached distributions represent the real-world distributions for the selected samples. Most of the employees at MoICT are in the age ranges from twenty-six to fifty years old while the majority of staff and students in the University of Jordan are classified under the age of twenty-six years old.

Keeping in mind the fact that the questionnaire was distributed to all members of the two samples with no control over the age of respondents, it was noticeable that young people who are less than twenty-six years old have more interest towards using internet and new tools of information and communication technologies.

However, this not necessarily means that internet users are all using government websites to obtain government information and services. This point can be noticed in the demographics of IT and internet skills, daily use of internet and average use of e-government services.

### 7.3.3. Educational level:

To acquire additional information about the sample, the third demographic variable in the questionnaire was the level of education. The responses were categorized into six groups based on the level of education: high school and under, community college diploma, bachelor degree, higher diploma, masters and PhD degrees.

Table 7.4 shows the total number of respondents in the whole study and their distributions by educational level among providers and users where the number of respondents in the high school or under group was 19 (3.0%); 4 of them were providers (4.4%) and 15 were users (2.7%).

The number of respondents in the community college diploma group was 25 (3.9%); 10 of them were providers (11.1%) and 15 were users (2.7%).

The number of respondents in the bachelor degree group was 517 (80.5%); 51 of them were providers (56.7 %) and 466 were users (84.4%).

The number of respondents in the higher diploma group was only 2 (0.3 %); one of them was provider with percent ratio equals to 1.1% and the other was user with percent ratio equals to 0.2% of the entire sample.

The number of respondents in the masters group was 39 (6.1%); 21 of them were providers (23.3%) and 18 were users (3.3%).

As well, the number of respondents in the PhD degree group was 40 (6.2%); 3 of them were providers (3.3%) and 37 were users (6.7%).

Table 7.4: Distribution of respondents by educational level.

	Option	Number	Percentage (%)
All	High school or under	19	3.0
	College diploma	25	3.9
	Bachelor	517	80.5
	Higher diploma	2	0.3
	Master	39	6.1
	PhD	40	6.2
	Total	642	100.0
Providers	High school or under	4	4.4
	College diploma	10	11.1
	Bachelor	51	56.7
	Higher diploma	1	1.1
	Master	21	23.3
	PhD	3	3.3
	Total	90	100.0
Users	High school or under	15	2.7
	College diploma	15	2.7
	Bachelor	466	84.4
	Higher diploma	1	0.2
	Master	18	3.3
	PhD	37	6.7
	Total	552	100.0

Figure 7.8 shows the distributions of the entire sample by educational level of all respondents whether they are providers or users. Figures 7.9 and 7.10 respectively show the distributions by educational level for providers and users.

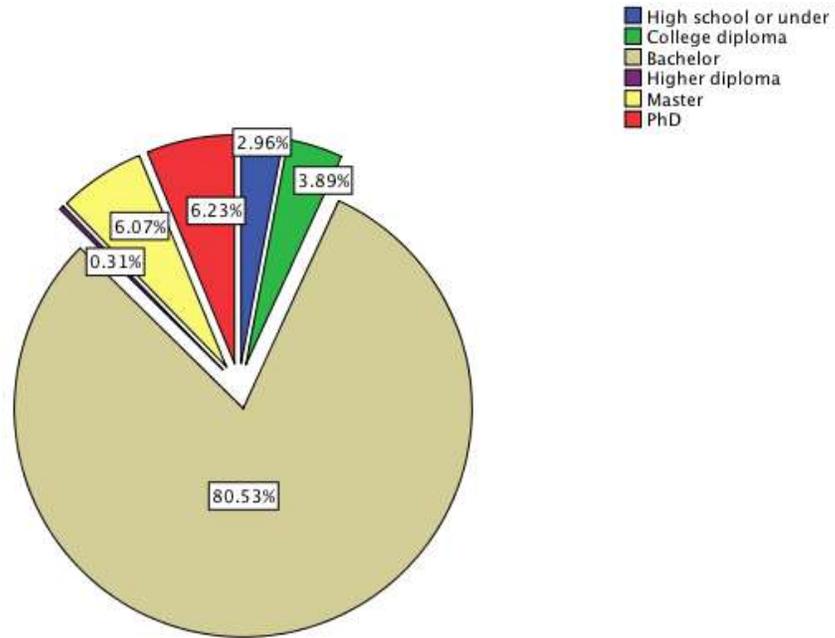


Figure 7.8: Respondents distribution by educational level

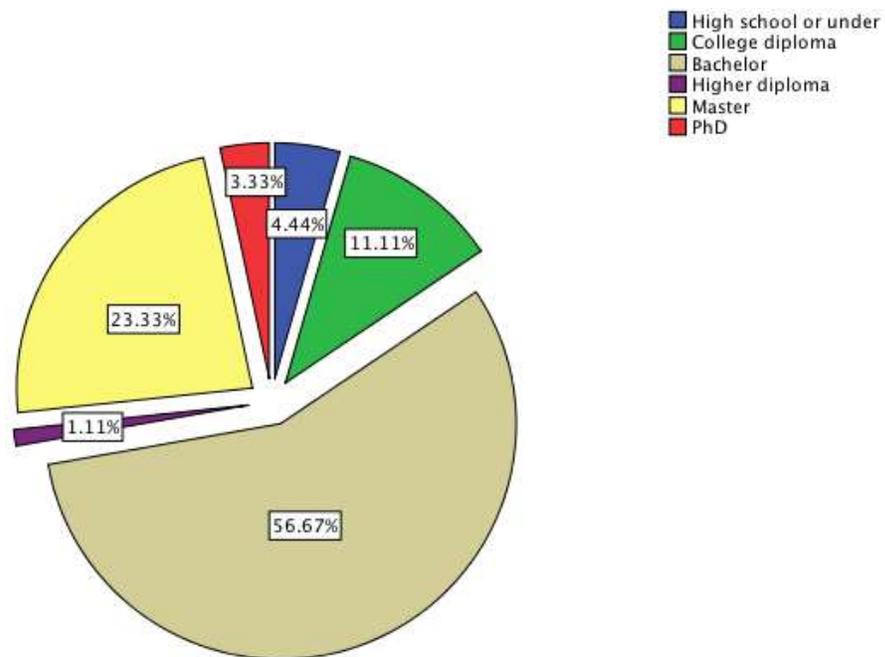


Figure 7.9: Providers distribution by educational level

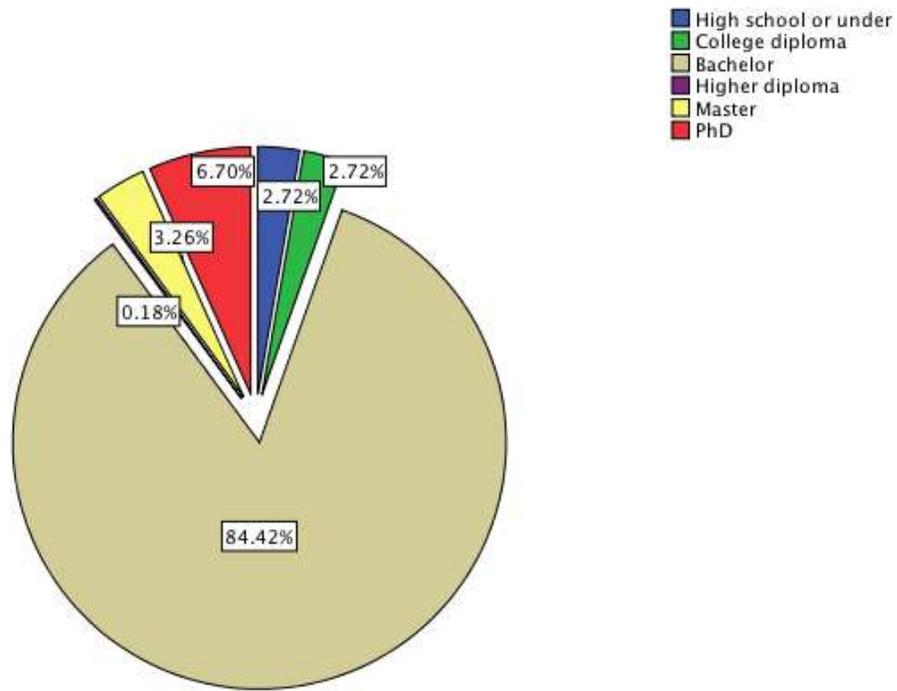


Figure 7.10: Users distribution by educational level

It is obvious that the majority of respondents were categorized under the bachelor's degree group in regard to their educational level because it is the normal qualification required for employment in Jordanian government sector including MoICT and University of Jordan. Also, the major proportion of students and employees in the University of Jordan fall under this category. Therefore, it is reasonable to notice that no major differences between the two samples of providers and users in this regard since it reflects their actual distributions in the real world.

#### 7.3.4. Internet and information technology skills:

More information about the demographic characteristics of the two samples were obtained through the fourth question related to internet and information technology skills for all respondents in the study. Respondents can be categorized into three groups

based on their knowledge in the internet and information technology skills: weak, good and excellent.

Table 7.5 shows the total number of respondents in the whole study and their distribution by internet and information technology skills among providers and users where the number of respondents recognized themselves as weak was 15 (2.3%); 2 (2.2%) were providers and 13 (2.4%) were users. The number of respondents recognized themselves as good was 272 (42.4%); 13 (14.4%) were providers and 259 (46.9%) were users. The number of respondents recognized themselves as excellent was 355 (55.3%); 75 (83.3%) were providers and 280 (50.7%) were users.

Table 7.5: Distribution of respondents by internet and information technology skills.

	Option	Number	Percentage (%)
<b>All</b>	Weak	15	2.3
	Good	272	42.4
	Excellent	355	55.3
	Total	642	100.0
<b>Providers</b>	Weak	2	2.2
	Good	13	14.4
	Excellent	75	83.3
	Total	90	100.0
<b>Users</b>	Weak	13	2.4
	Good	259	46.9
	Excellent	280	50.7
	Total	552	100.0

Figure 7.11 shows the distributions of the entire sample by their internet and information technology skills for all respondents whether they were providers or users. Figures 7.12 and 7.13 respectively show the distributions by the excellency level in internet and information technology skills for providers and users.

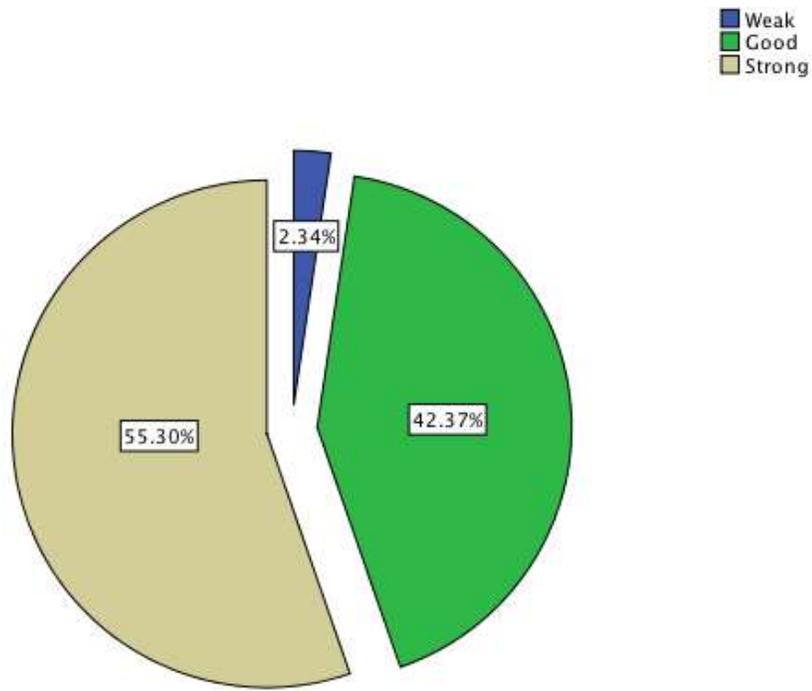


Figure 7.11: Respondents distribution by internet and information technology skills

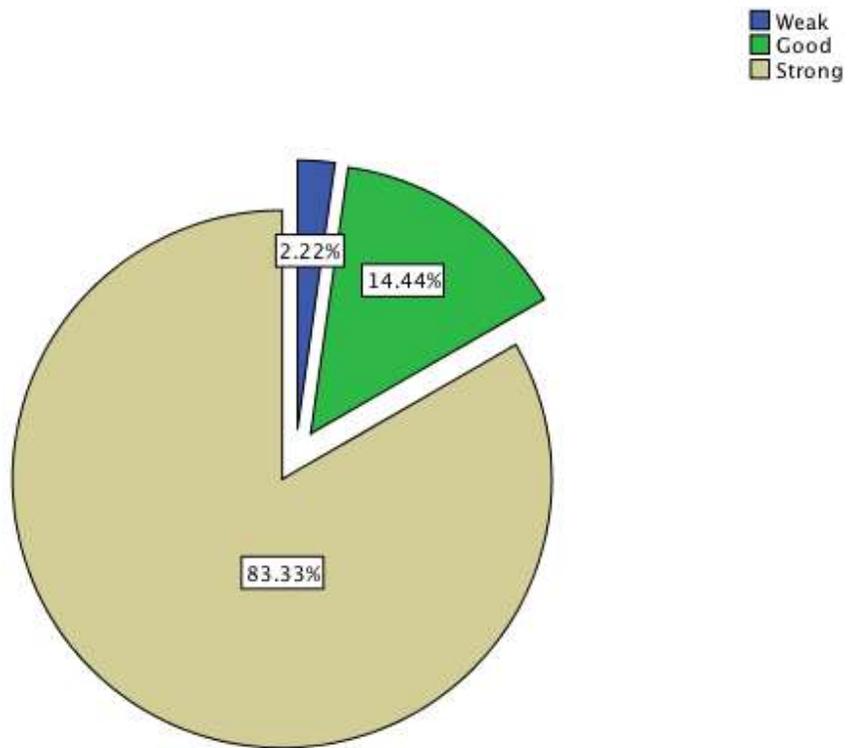


Figure 7.12: Providers distribution by internet and information technology skills

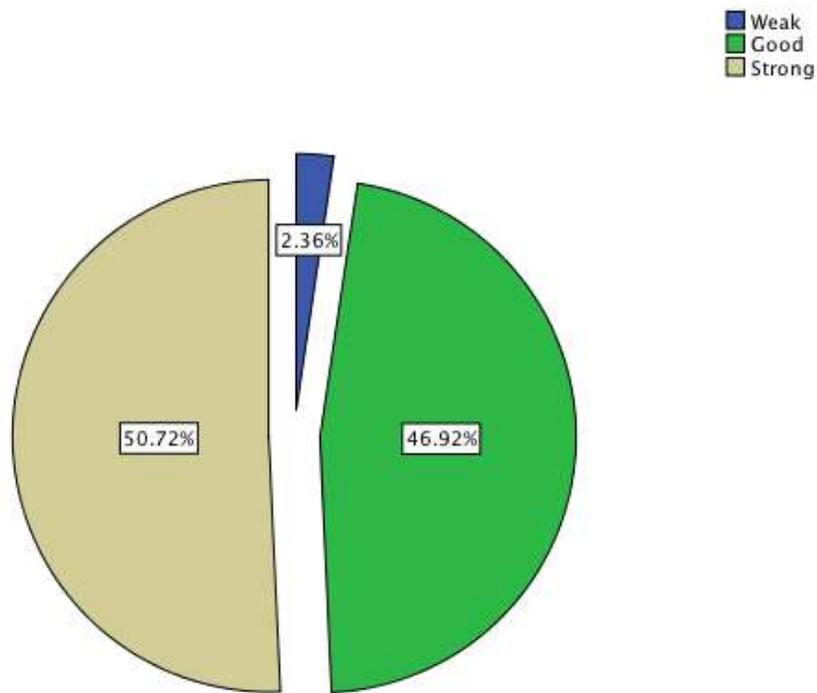


Figure 7.13: Users distribution by internet and information technology skills

Most respondents see themselves good or excellent in internet and information technology skills which is very reasonable since the target audiences in MoICT and University of Jordan are supposed to be familiar with new technologies such as internet and other tools of information technology. This study focuses on the online users or educated people who have access to the internet and who have the ability to use e-government services.

Unexpected outcome was on the providers side. Two respondents identified themselves as under the weak category. This should be taken into consideration and further investigation to identify the possible reasons for such answers from the people who are responsible for providing e-government services to the public. Otherwise, the distributions of all responses by the internet and information technology skills are satisfactory and reflect the real-world environment.

### 7.3.5. Daily use of internet:

Another important attribute reflecting demographic characteristics in the questionnaire is the average daily use of internet which can be linked to the previous question about the level of excellency in internet and information technology skills of the respondents. It is expected for those who have advanced level of internet and information technology skills to use internet regularly for many hours a day in contrary to people who are not very good in internet and information technology skills. This assumption was tested by extracting the responses from all respondents whether they are providers or users of e-government services. The responses might be one of three options based on the daily amount of time a respondent spend navigating the internet. Those options are: one hour or less, two or three hours and four hours or more.

As shown in table 7.6, the total number of respondents in the whole study and their distributions by their daily use of internet among providers and users were listed.

The number of respondents belonging to the first category (one hour or less) was 48 (7.5%); 5 (5.6%) were providers and 43 (7.8%) were users. The number of respondents belonging to the second category (two or three hours) was 210 (32.7%); 22 (58.2%) (24.4%) were providers and 188 (58.2%) (34.1%) were users. The number of respondents belonging to the third category (four hours or more) was 384 (59.8%); 63 respondents (70%) were providers and 321 respondents (58.2%) were users.

Table 7.6: Distribution of respondents by daily use of internet.

	Option	Number	Percentage (%)
All	1 hour or less	48	7.5
	2 or 3 hours	210	32.7
	4 hours or more	384	59.8
	Total	642	100.0
Providers	1 hour or less	5	5.6
	2 or 3 hours	22	24.4
	4 hours or more	63	70.0
	Total	90	100.0
Users	1 hour or less	43	7.8
	2 or 3 hours	188	34.1
	4 hours or more	321	58.2
	Total	552	100.0

Figure 7.14 shows the distributions of the entire sample by their daily use of internet for all respondents whether they were providers or users. Figures 7.15 and 7.16 respectively show the distributions for the sample of providers and users by their daily use of internet.

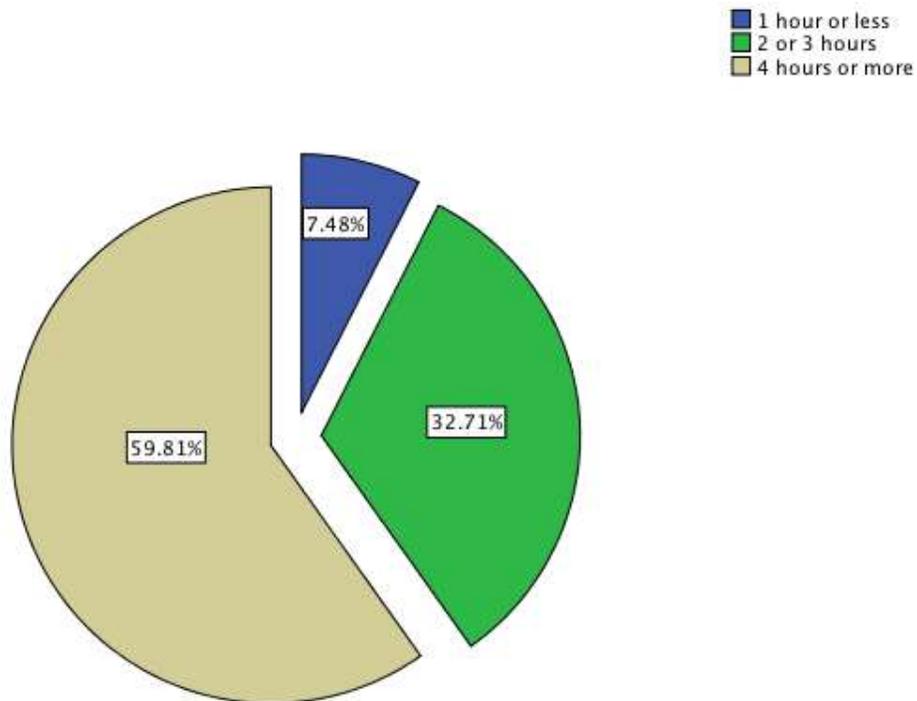


Figure 7.14: Respondents distribution by daily use of internet

- 1 hour or less
- 2 or 3 hours
- 4 hours or more

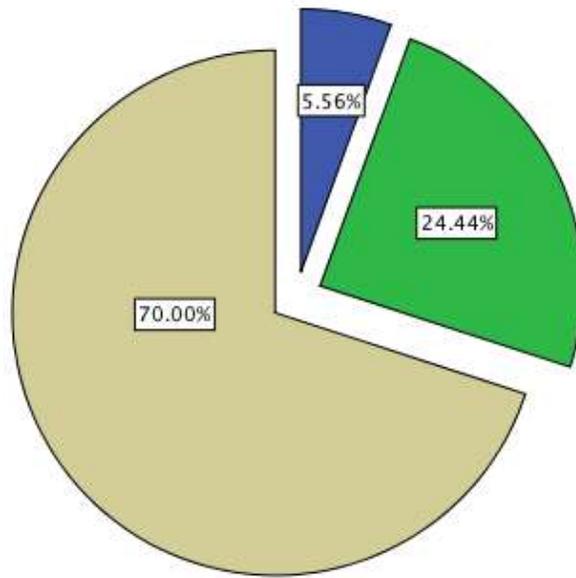


Figure 7.15: Providers distribution by daily use of internet

- 1 hour or less
- 2 or 3 hours
- 4 hours or more

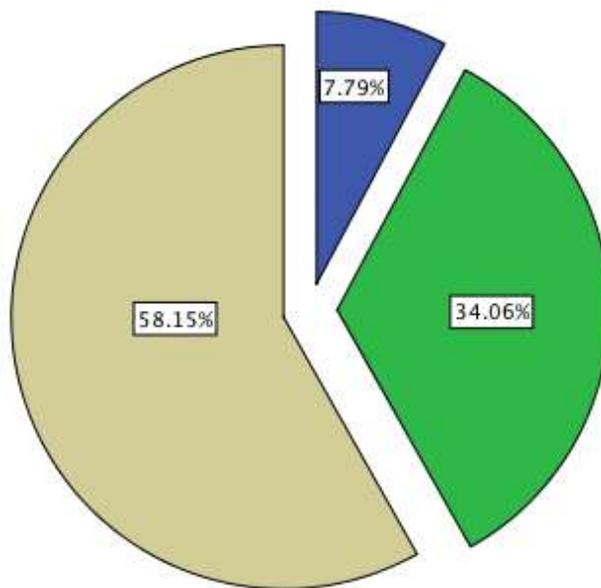


Figure 7.16: Users distribution by daily use of internet

By analyzing the data of the table and figures above, it can be seen that the percentages of providers and users are related and have some similarities such as the same order for the three categories regardless of their percentages. Also, the percentages of providers are in line with the percentages of users with some slightly difference where the percentage for providers bigger than the percentage of users in about 10% for the second and third categories. Therefore, the percentages of all responses regarding daily use of internet among providers and users seems to be very reasonable and satisfactory in the context of this study.

#### 7.3.6. Use of e-government services:

The last question in the demographic section aims to acquire information about the familiarity of respondents with using e-government services. In this regard, respondents were asked to select the option that best describes their average use of e-government services whether it is rarely, sometimes, frequently or always.

As shown in table 7.7, the total number of respondents in the whole study and their distributions by the level of using e-government services were considered.

Table 7.7: Distribution of respondents by use of e-government services.

	Option	Number	Percentage (%)
<b>All</b>	Rarely	240	37.4
	Sometimes	259	40.3
	Frequently	91	14.2
	Always	52	8.1
	Total	642	100
<b>Providers</b>	Rarely	12	13.3
	Sometimes	27	30.0
	Frequently	24	26.7
	Always	27	30.0
	Total	90	100
<b>Users</b>	Rarely	228	41.3
	Sometimes	232	42.0
	Frequently	67	12.1
	Always	25	4.5
	Total	552	100.0

The number of respondents answered the question by selecting the first option (rarely) was 240 (37.4%); 12 were providers (13.3%) and 228 were users (41.3%). The number of respondents answer the question by selecting the second option (sometimes) was 259 (40.3%); 27 were providers (30%) and 232 were users (42%). The number of respondents answer the question by selecting the third option (frequently) was 91 (14.2%); 24 were providers (26.7%) and 67 were users (12.1%). Finally, the number of respondents answer the question by selecting the fourth option (always) was 52 (8.1%); 27 of them were providers (30%) and 25 were users (4.5%).

Figure 7.17 uses shows the distributions of the entire sample by their daily use of e-government services for all respondents whether they are providers or users. Accordingly, figures 7.18 and 7.19 respectively show the distributions by the daily use of e-government services for providers and users.

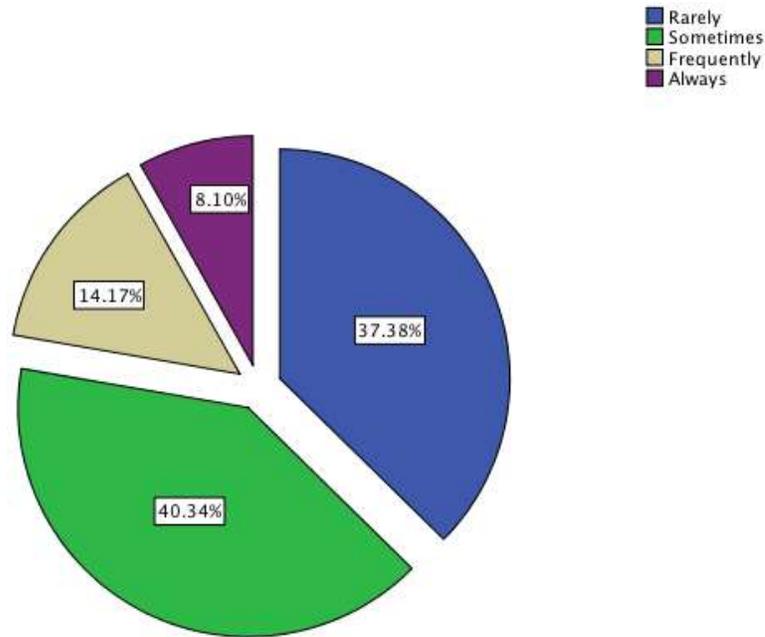


Figure 7.17: Respondents distribution by use of e-government services.

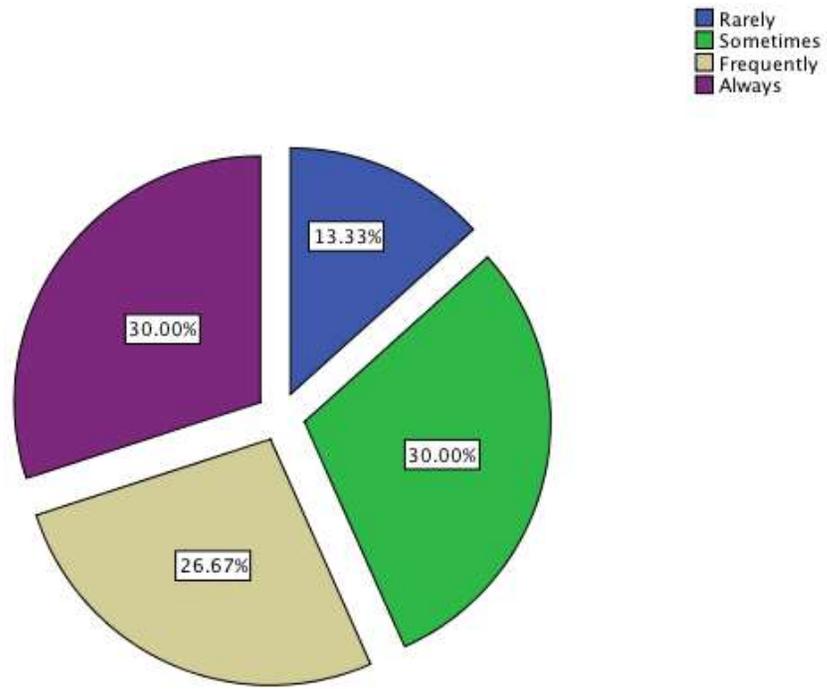


Figure 7.18: Providers distribution by use of e-government services

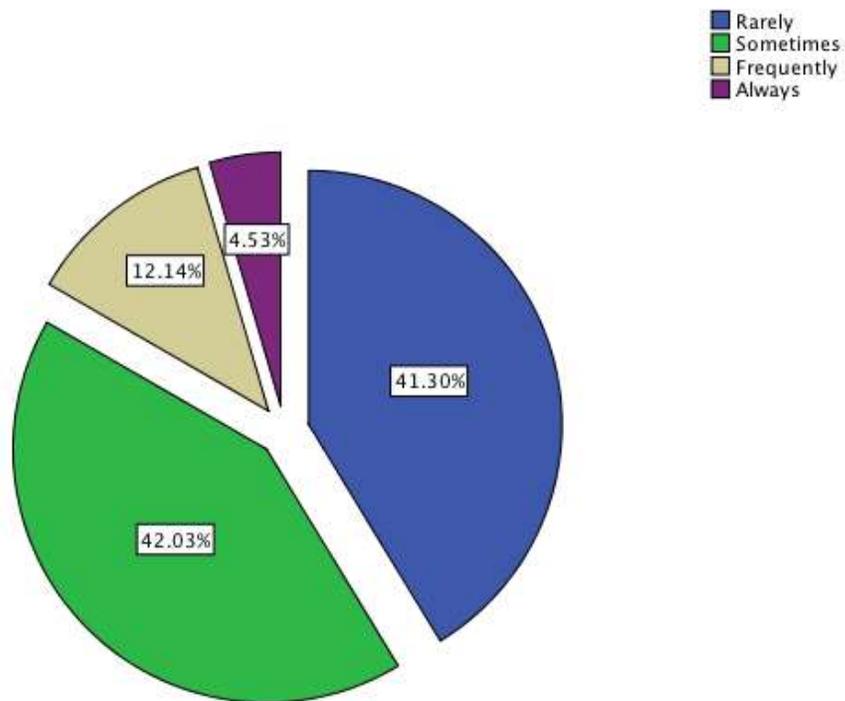


Figure 7.19: Users distribution by use of e-government services

Despite the satisfactory and reasonable results obtained from analyzing the previous demographic characteristics especially the level of excellency in the internet and

information technology skills in addition to the average daily use of internet, the use of e-government services still in an initial stage since the most respondents indicated that they only use e-government services rarely or sometimes not always or even frequently. However, a good proportion of providers indicated that they are using e-government services regularly (always: 30%, frequently: 26.7%, and sometimes: 30%), so this result is satisfactory and reflects the normal situation since the providers are supposed to have the required knowledge, experience and skills to take the full range of benefits offered by the effective use of e-government services.

One would expect them to be at least 80% (always), how come they are working on e-government services and do not use them. A non-small proportion of providers selected the first option rarely (13.33) to describe their use of e-government services which needs to be taken into account to determine the reasons for those providers of e-government services not to use the services that they are themselves providing to the public.

These results revealed that more efforts are need towards the effective spread of the level of awareness about e-government services among the public in order to encourage people to use e-government services.

#### 7.4. Inferential data and statistical tests

After fully examining demographic characteristics of the samples and comparing the attributes of providers and users based on their responses, more advanced level of data analysis was carried out using SPSS software and including the following statistical tests:

#### 7.4.1. Analysis of the responses for each question in the survey

In this section, data analysis of the collected responses is carried out to examine every question in order to understand the perspectives of providers and users regarding the factors under study.

##### 7.4.1.1. Current situation factors

The following table shows the statistical results of the responses regarding the current situation of service integration in e-government implementation in Jordan.

Table 7.8: Statistical results of the responses regarding the current situation.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q1	There is an improvement in the level of available e-government services	3.37	3	4	0.894	3.63	4	4	0.756	3.41	4	4	0.881
Q2	There is an improvement in the level of official e-government portal	3.43	4	4	0.88	3.5	4	4	0.824	3.44	4	4	0.872
Q3	It is possible to reach all government information using the official e-government portal	3.24	3	4	1.047	3.21	3	4	0.977	3.23	3	4	1.037
Q4	It is possible to communicate directly between government and public via official e-government portal	3.03	3	3	1.047	3.06	3	3	0.952	3.03	3	3	1.033
Q5	It is possible to fully complete all transactions through the e-government webpage.	3.06	3	4	1.146	2.98	3	3	1.027	3.05	3	3	1.129
Q6	There is no need for standardization of procedures and protocols of different government agencies	4.04	4	4	0.849	4.07	4	4	0.79	4.04	4	4	0.84
Q7	The e-government agencies are able to reach the advanced level reached by e-commerce and private sector	1.76	2	1	0.807	1.78	2	2	0.776	1.76	2	2	0.802
Q8	There is a considerable number of e-government services on the official e-government portal	4.17	4	4	0.81	4.22	4	4	0.818	4.18	4	4	0.81
Q9	There is a central administration for e-government projects throughout all government agencies	2.34	2	2	0.891	2.11	2	2	0.8	2.31	2	2	0.882
Q10	There is continuous development and regular update to support implementation of service integration	2.43	2	2	0.913	2.42	2	2	0.924	2.43	2	2	0.914
Q11	There is public awareness about service integration and encouraging people to use e-government portal	3.27	3	3	0.906	3.14	3	3	0.842	3.25	3	3	0.897
Q12	There is hope for rapid enhancements on service integration in the forthcoming years	3.74	4	4	0.825	3.98	4	4	0.749	3.77	4	4	0.819

The answers of the questions that measure the perspectives of respondents (providers and users) about the current situation of service integration in e-government implementation in Jordan are shown in figure 7.20.

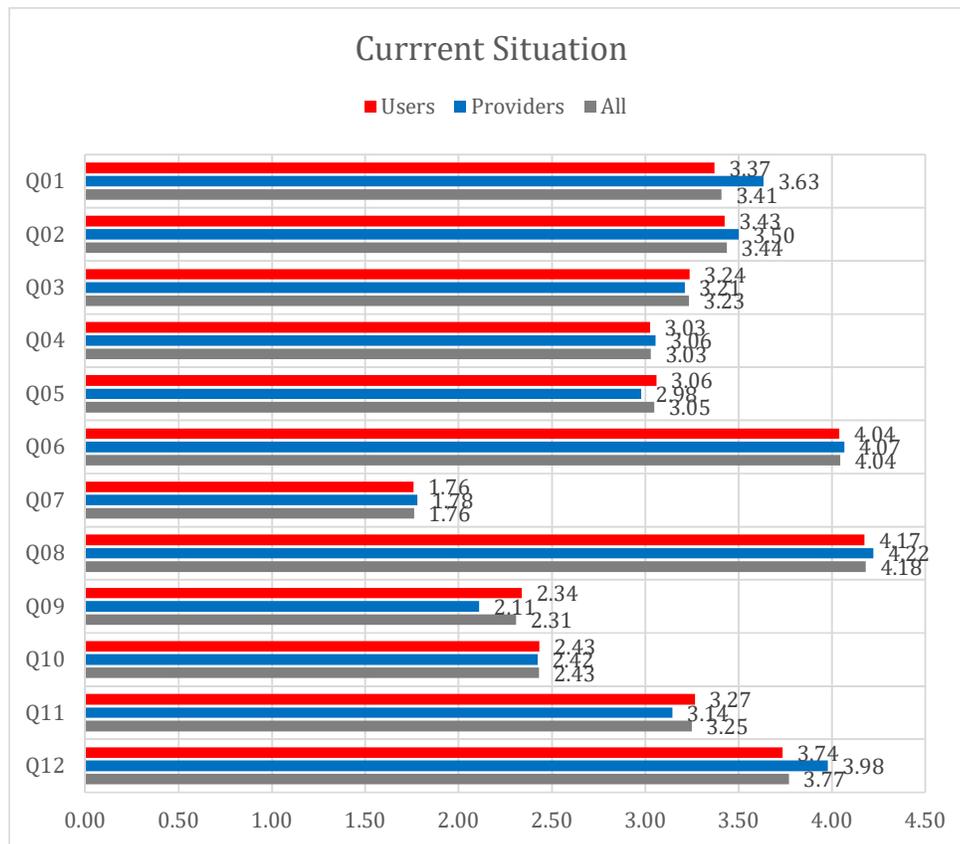


Figure 7.20: Perception of respondents about the current situation of service integration in e-government implementation in Jordan.

Overall, providers are more satisfied than users with the improvements in the level of currently available e-government services (mean 3.63), the improvements in the level of e-government portal (mean 3.50) and the ability of direct communication between government and public through the official e-government portal (mean 3.06). On the other hand, the values indicate the satisfaction of users (means 3.37, 3.43 and 3.03 respectively) which are less than the values reflecting the perspectives of providers. Providers also have better hopes for rapid enhancements on service integration in forthcoming years (means 3.98 compared to mean 3.74 for users).

On the other hand, the users are more satisfied with the possibility of fully completing transactions through the official e-government portal (mean 3.06), the public awareness about service integration and the existence of central administration for e-government

projects (mean 3.27) compared to the satisfaction of the providers (mean 2.98 and 3.14 respectively).

The most dissatisfaction of both users and providers was about the ability of e-government implementation to reach the advanced levels of e-commerce and private sector companies in developing and delivering e-services (mean 2.43).

Figures 7.21 to 7.27 show the view of respondents regarding the seven factors affecting service integration in e-government implementation in Jordan. The figures show the perspectives of both providers and users, the discussion below addresses the mean of all respondents.

#### 7.4.1.2. Managerial factors

The following table shows the statistical results of the responses regarding the managerial factors of service integration in e-government implementation in Jordan.

Table 7.9: Statistical results of the responses regarding the managerial factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q13	It is important to provide policies to support data sharing between government agencies	4.1	4	4	0.774	4.22	4	4	0.536	4.11	4	4	0.746
Q14	There is no fear of change for government employees affecting the e-government services	2.44	2	2	1.045	2.29	2	2	0.838	2.42	2	2	1.019
Q15	The administrative policies in government agencies are fixed and they are not frequently changed	2.46	2	2	0.931	2.39	2	2	0.817	2.45	2	2	0.915
Q16	There is no shortage of qualified employees due low wages and lack of incentives in government agencies.	1.93	2	1	1.026	1.57	1	1	0.925	1.88	2	1	1.02
Q17	Government employees do not fear losing their jobs as a result of implementation of integrated services	2.27	2	2	0.943	2.49	2	2	1.073	2.3	2	2	0.965
Q18	The e-government services integration do not imply higher level of monitoring the work of government employees	3.71	4	4	0.897	3.52	4	4	0.915	3.68	4	4	0.901
Q19	The e-government service integration does not threaten the advantages of those who benefit from keeping the current situations unchanged	3.56	4	3	0.927	3.62	4	4	0.894	3.57	4	3	0.922
Q20	The e-government service integration implies better efficiency in monitoring the progress of government transactions	3.86	4	4	0.856	4.11	4	4	0.644	3.9	4	4	0.833
Q21	The e-government service integration limits the level of human freedom in the administrative decisions	3.56	4	4	0.933	3.67	4	4	0.924	3.57	4	4	0.932
Q22	The e-government service integration provides higher level of transparency	3.83	4	4	0.998	4.17	4	4	0.811	3.87	4	4	0.981

Both providers and users agree on the importance of providing data sharing policies among different government agencies (means 4.04 and 4.18 respectively).

They also agree that the e-government service integration does not threaten the advantages of those who benefit from keeping the current situations unchanged, the e-government service integration implies better efficiency in monitoring the progress of

government transactions, the e-government service integration limits the level of human freedom in the administrative decisions and the e-government service integration provides higher level of transparency.

A significant outcome is that providers (the employees) fear that some employees may lose their jobs due to the implementation of integrated services. From the user point of view, this is not a critical issue.

The most critical managerial point affecting the implementation of service integration in e-government as seen by both providers and users is the lack of qualified staff. It is worth noting that providers agree more with this point (mean 1.57) which raises a flag about the hiring process and the way employees see themselves and their teams.

The answers for the questions measuring the perspectives of respondents (providers and users) about the managerial factors of service integration in e-government implementation in Jordan are shown in figure 7.21.

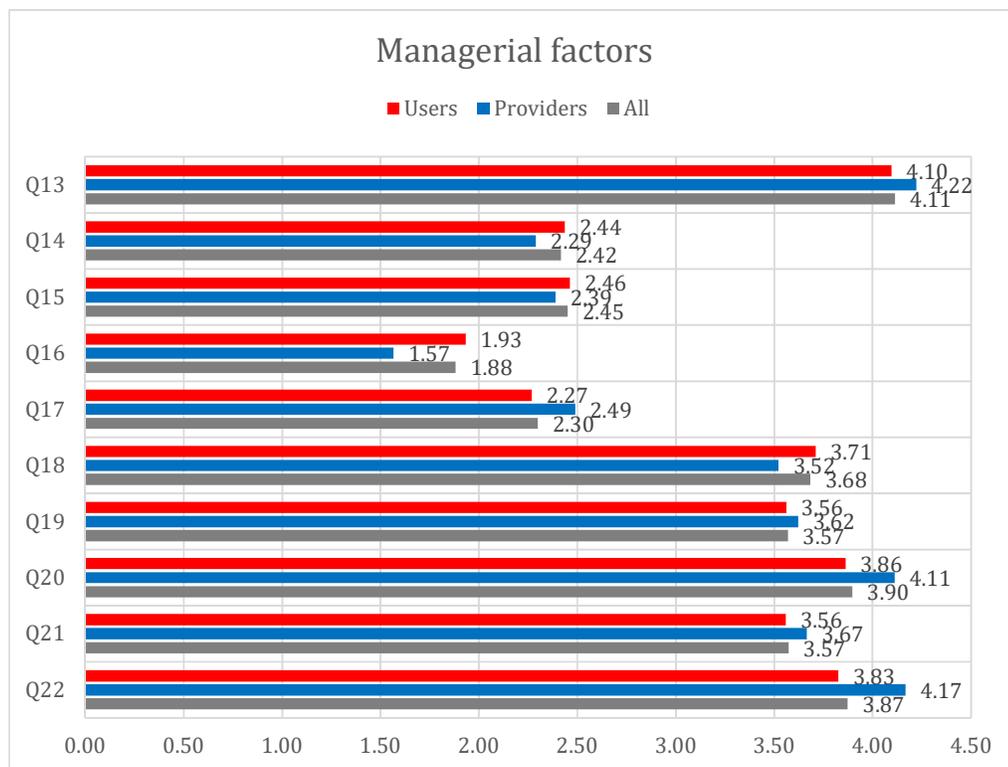


Figure 7.21: Perception of respondents about the managerial factors of service integration in e-government implementation in Jordan.

### 7.4.1.3. Cultural factors

The following table shows the statistical results of the responses regarding the cultural factors of service integration in e-government implementation in Jordan.

Table 7.10: Statistical results of the responses regarding the cultural factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q23	There are good internet skills and e-culture in the society	2.71	2	2	1.12	2.78	2.5	2	1.149	2.72	2	2	1.123
Q24	There is awareness about the existence of the e-government in Jordan	2.31	2	2	0.937	2.26	2	2	0.955	2.3	2	2	0.939
Q25	There is no lack of trust in the e-services (preferring the traditional or paper based way)	2.24	2	2	1.024	2.01	2	2	0.88	2.2	2	2	1.007
Q26	Educational level is an important factor for using e-government services	4.09	4	4	0.871	4.18	4	4	0.894	4.1	4	4	0.874

Providers and users consider the educational level an important indication about the cultural factors affecting the implementation of service integration in e-government. They both stated that there is a lack of trust in e-services since many people are still preferring the traditional paper based methods to conduct government transactions instead of e-services, and that the awareness of integrated services and their existence still unsatisfactory.

The answers of the questions measuring the perspectives of respondents (providers and users) about the cultural factors of service integration in e-government implementation in Jordan are shown in figure 7.22.

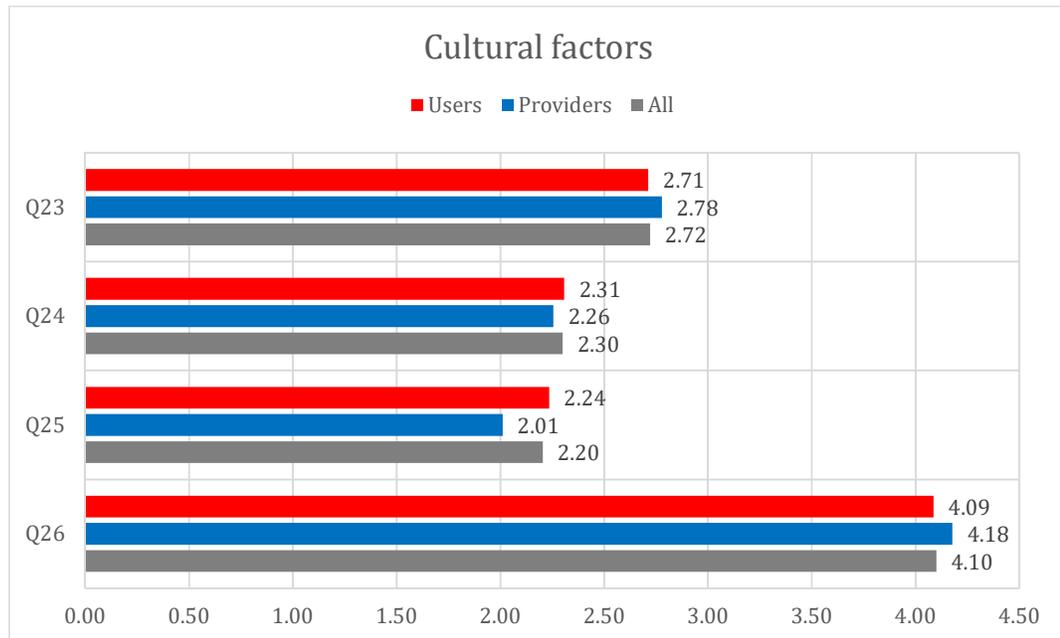


Figure 7.22: Perception of respondents about the cultural factors of service integration in e-government implementation in Jordan.

#### 7.4.1.4. Social factors

The following table shows the statistical results of the responses regarding the social factors of service integration in e-government implementation in Jordan.

Table 7.11: Statistical results of the responses regarding the social factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q27	Using integrated e-government services limits the role of favoritism due connections	3.79	4	4	1.123	4	4	4	0.912	3.82	4	4	1.098
Q28	There is no limited computer and internet access for certain social groups like elderly and those with special needs	2.14	2	2	0.944	2.16	2	2	0.911	2.14	2	2	0.939
Q29	The geographic location of the user is an important factor for using e-government integrated services	3.74	4	4	0.948	3.64	4	4	0.952	3.73	4	4	0.949
Q30	The age range is an important factor for using e-government integrated services	3.79	4	4	0.916	3.83	4	4	0.939	3.79	4	4	0.919
Q31	The gender is an important factor for using e-government integrated services	2.63	3	3	1.185	2.5	2	3	1.183	2.61	3	3	1.185
Q32	The use of e-government integrated service and the ability of doing transactions from home does not weaken the social bond in the community	3.03	3	3	1.144	3.13	3	4	1.124	3.05	3	2	1.141

It can be seen from the table 7.11 above and the figure 7.23 below that the respondents agree that the implementation of service integration in e-government limits the favoritism due to connections among people engaged in e-government transactions. They also agree that there is limited computer and internet access of certain social groups (like the elderly, or those with special needs).

Overall, they both agree that the age and geographical location but not the gender play a role in the usage of e-government integrated services.

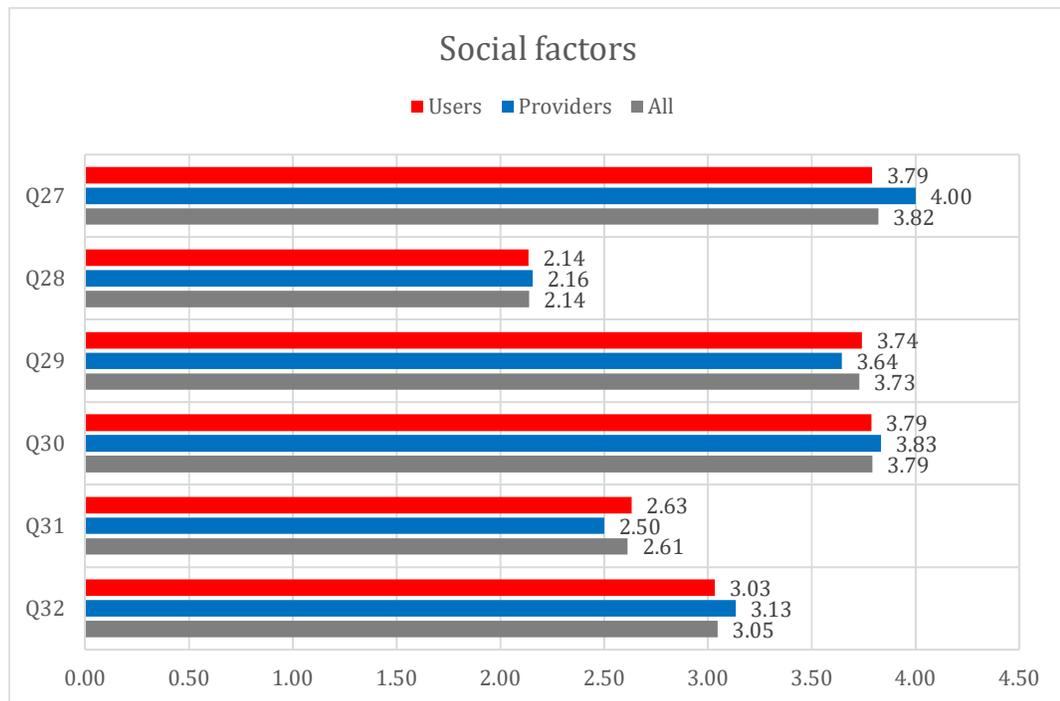


Figure 7.23: Perception of respondents about the social factors of service integration in e-government implementation in Jordan.

#### 7.4.1.5. Political factors

The following table shows the statistical results of the responses regarding the political factors of service integration in e-government implementation in Jordan.

Table 7.12: Statistical results of the responses regarding the political factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q33	There is a clear vision and support from highest political levels for implementation of service integration in e-government	3.49	4	4	0.924	3.84	4	4	0.886	3.54	4	4	0.926
Q34	There is evident enhancement of democratic practices through the modern e-services like e-voting and the ability to communicate directly with people in charge through e-mails	3.66	4	4	0.875	3.8	4	4	0.889	3.68	4	4	0.878
Q35	There is no drawback in the development of service integration due to the unstable political situation in the region.	3.15	3	3	0.921	3.01	3	3	0.918	3.13	3	3	0.921
Q36	There is effective political support to speed up all operations and activities related to the development of service integration	3.32	3	3	1.006	3.6	4	4	0.969	3.36	3	4	1.005

Figure 7.24 shows the responses of providers and users regarding the political factors of service integration in e-government implementation in Jordan. Providers agree more than the users that there is a clear vision and real support from the highest political levels in the country to implement service integration, and that the current unstable

political situation in the region affects the advance of service integration in e-government.

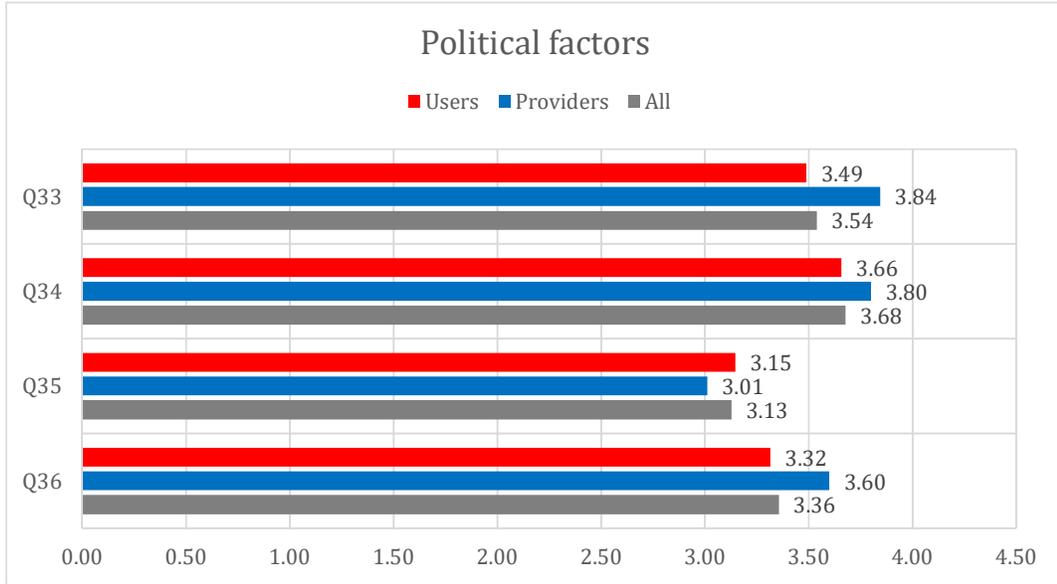


Figure 7.24: Perception of respondents about the political factors of service integration in e-government implementation in Jordan.

#### 7.4.1.6. Legal factors

The following table shows the statistical results of the responses regarding the legal factors of service integration in e-government implementation in Jordan.

Table 7.13: Statistical results of the responses regarding the legal factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q37	There are enough rules and regulations regarding e-government service integrations	2.52	2	2	0.883	2.43	2	2	0.835	2.51	2	2	0.877
Q38	The current rules and regulations regarding e-government integration services are clear	2.46	2	2	0.88	2.4	2	2	0.747	2.45	2	2	0.863
Q39	Citizens are aware of the relevant rules and regulations regarding e-government service integration	3.21	3	3	0.948	3.22	3	3	0.921	3.21	3	3	0.944
Q40	There is continuous update for the relevant rules and regulations regarding e-government services	3.52	4	4	0.887	3.64	4	4	0.783	3.53	4	4	0.874
Q41	The relevant rules and regulations are available and easy to find	3.38	3	4	0.971	3.24	3	3	0.952	3.36	3	4	0.969

The answers of the questions measuring the perspective of respondents about the legal factors of service integration in e-government implementation in Jordan are shown in figure 7.25.

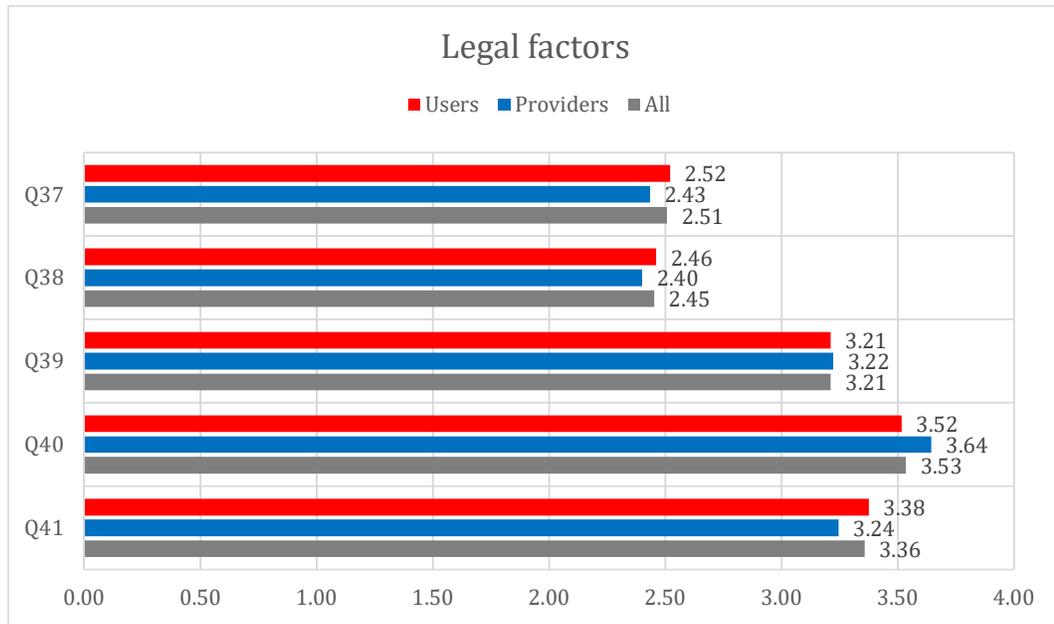


Figure 7.25: Perception of respondents about the legal factors of service integration in e-government implementation in Jordan.

Overall providers and users agree that the rules and regulations related to implementation of service integration in e-government are updated and there is general awareness of it, but they also both agree that they are not clear.

#### 7.4.1.7. Technological factors

The following table shows the statistical results of the responses regarding the technological factors of service integration in e-government implementation in Jordan.

Table 7.14: Statistical results of the responses regarding the technological factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q42	It is not difficult for the government agency to identify the identity of the user and his/her eligibility	2.74	3	2	1.029	3.04	3	2	1.131	2.78	3	2	1.049
Q43	It is safe and secure to share and transfer data online to the government agencies	3.65	4	4	0.903	3.81	4	4	0.898	3.68	4	4	0.903
Q44	There is agreement and connection between the information systems used in the different government agencies	3.44	4	4	0.988	3.18	3	4	1.107	3.4	3	4	1.009
Q45	There is sufficient infrastructure including software, hardware and network technologies	2.3	2	2	0.928	2.58	2	2	1.112	2.34	2	2	0.96
Q46	There is no frequent system failure or malfunctioning in software, hardware and other important tools and devices required	2.27	2	2	0.924	2.48	2	2	0.986	2.3	2	2	0.935
Q47	There are no frequent delays in fixing errors and malfunctions of software, hardware and other important tools and devices	2.28	2	2	0.947	2.62	2	2	1.001	2.32	2	2	0.962
Q48	There are no delays in updating the information	2.29	2	2	0.933	2.43	2	2	0.972	2.31	2	2	0.939
Q49	There is no difficulty in performing e-payments due to lack technical requirements	2.42	2	2	1.01	2.62	2	2	1.023	2.45	2	2	1.014
Q50	There is no shortage of experienced programmers and qualified staff in government agencies	3.51	4	4	0.971	3.62	4	4	1.045	3.53	4	4	0.982

Users are not satisfied with the status of many technical aspects related to the implementation of service integration in e-government. They consider that there is inadequate infrastructure in terms of software, hardware and network technologies, frequent system failure, frequent malfunctions in software, hardware and other required tools and devices, frequent delays in fixing failures and malfunctions, significant delays in updating the information and difficulties in performing the e-payments due to the lack of technical requirements.

Providers rate these points somehow negative as well but not as bad as the users. This shows a general gap between their perspective which needs to be addressed in order to improve the implementation of service integration in e-government by fulfilling the users' technological needs so that they can use the available services.

It is worth mentioning that both providers and users acknowledged the existence of security and safety requirements for transferring data online and the existence of qualified staff in many government agencies. The answers of the questions measuring the perspective of respondents about the technological factors of service integration in e-government implementation in Jordan are shown in figure 7.26.

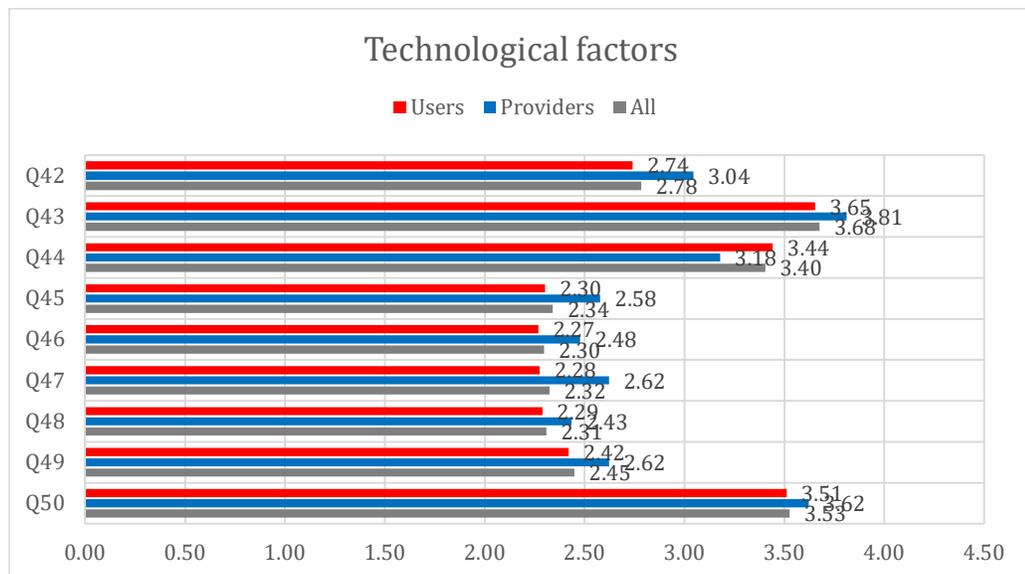


Figure 7.26: Perception of respondents about the technological factors of service integration in e-government implementation in Jordan.

#### 7.4.1.8. Economic factors

The following table shows the statistical results of the responses regarding the economic factors of service integration in e-government implementation in Jordan.

Table 7.15: Statistical results of the responses regarding the economic factors.

#	Statement:	User				Provider				All			
		Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation	Mean	Median	Mode	STD Deviation
Q51	Providing the needed infrastructure including software, hardware and network technologies is very costly	2.56	2	2	1.054	2.32	2	2	0.958	2.53	2	2	1.044
Q52	Developing and implementing the integrated service is very costly	2.61	2	2	1.08	2.32	2	2	0.872	2.57	2	2	1.058
Q53	Regular maintenance and technical support for infrastructure required to sustain service integration is very costly	2.54	2	2	1.027	2.3	2	2	0.88	2.51	2	2	1.01
Q54	Training government employees involved in the development and implementation of service integration is very costly	2.61	3	2	1.053	2.6	2	2	1.047	2.61	3	2	1.051
Q55	Marketing and spread awareness of service integration among people in the society is very costly	2.67	3	2	1.055	2.7	3	2	0.988	2.68	3	2	1.045
Q56	Owning personal computers and smart phones for citizens is very costly	2.73	3	2	1.191	2.79	3	2	1.086	2.74	3	2	1.176
Q57	Internet subscription for citizens is very costly	2.72	3	2	1.129	2.78	3	2	1.139	2.73	3	2	1.129
Q58	The low-income of citizens decrease the use of e-government integrated services	2.33	2	2	1.082	2.32	2	2	0.992	2.33	2	2	1.069

The answers of the questions measuring the perspective of respondents about the economic factors of service integration in e-government implementation in Jordan are shown in figure 7.27.

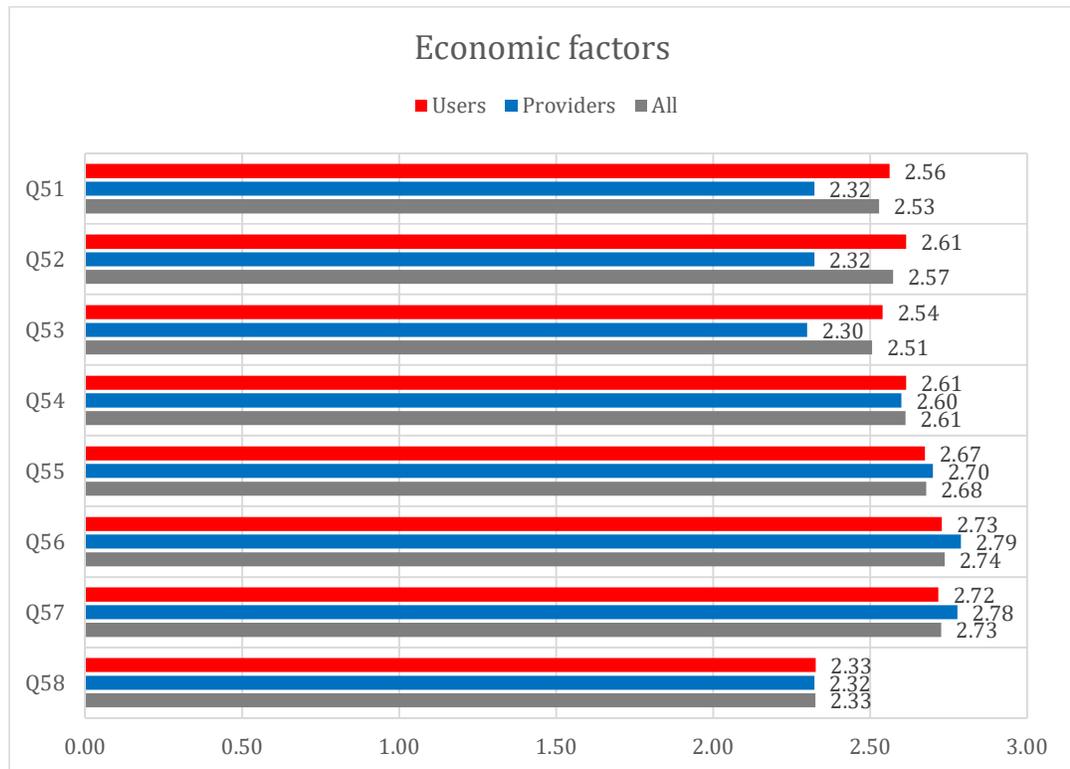


Figure 7.27: Perception of respondents about the economic factors of service integration in e-government implementation in Jordan.

Overall users rated developing the infrastructure, designing and programming integrated services as well as the regular maintenance as more expensive in comparison to providers. Their perspectives on the cost of training staff, the cost of marketing for integrated services, the cost of owning personal computers and smartphones, and the cost of internet subscription are better matching. Neither providers nor users see a strong correlation between the income of citizens and their use of integrated services.

#### 7.4.2. Measuring attitude of respondents

In this section, all responses of questions in the second part of the questionnaire that tests the main constructs of our research model were investigated in order to measure the input of all respondents towards understanding the role of service integration in e-government implementation in Jordan. The input of all respondents was measured by calculating medians of the responses to all questions under each construct in the study: current situation, managerial, cultural, social, political, legal, technological and economic factors.

Below are the tables that show the attitudes of respondents towards understanding the role of service integration in e-government implementation in Jordan and the key factors influencing this role. Table 7.16 shows the median values for the answers from all respondents, whether they are providers or users, to all eight constructs of the study.

Table 7.16: Median values of all responses for all constructs in the study.

	Construct	Median
All respondents	Current situation	3.00
	Managerial factors	3.50
	Cultural factors	2.50
	Social factors	3.50
	Political factors	3.50
	Legal factors	3.00
	Technological factors	3.00
	Economic Factors	2.25

This table presents the overall trend of responses from all participants regarding all constructs affecting the role of service integration in e-government implementation in Jordan. It combines both the responses of providers and the responses of users to give an indication of the overall perception of respondents regardless of their type (providers or users).

Next two tables compare the responses of providers and users to spot any noticeable differences between their perceptions about the main factors affecting the role of service integration in e-government implementation in Jordan. Table 7.17 shows the median values for the responses of providers to all eight constructs of the study.

Table 7.17: Median values of providers' responses for all constructs in the study.

	Construct	Median
Providers	Current situation	3.00
	Managerial factors	3.50
	Cultural factors	2.50
	Social factors	3.50
	Political factors	4.00
	Legal factors	3.00
	Technological factors	3.00
	Economic Factors	2.00

Table 7.18 shows the median values for the responses of users to all eight constructs of the study.

Table 7.18: Median values of users' responses for all constructs in the study.

	Construct	Median
Users	Current situation	3.00
	Managerial factors	3.50
	Cultural factors	2.50
	Social factors	3.50
	Political factors	3.50
	Legal factors	3.00
	Technological factors	3.00
	Economic Factors	2.50

It can be revealed from comparing the median values for the responses of providers and users that there is no significant differences in their attitude towards the role of service integration in e-government implementation in Jordan were the calculated medians for

all constructs of the study were equals except for the political and economic constructs were the median of providers responses to the construct of political factors was 4.0 while the median of users' responses to the construct of political factors was 3.5, and the median of providers responses to the construct of economic factors was 2.0 while the median of users responses to the construct of economic factors was 2.5. However, it is obvious that the difference is very small and has no effects on the general trend of data.

To determine exact attitude of respondents towards each construct associated to the role of service integration in e-government implementation in Jordan and to know their general trend, Likert scale was employed to apply five choices measurement that expresses the responses of the participants. The weight for each choice was identified based on the interval length between choices which is 0.80. As a result of using scale of five choices, the weighted median for every construct is extracted as in table 7.19.

Table 7.19: Weighted Median values for five choices Likert scale.

Scale	Weighted Median
Strongly disagree	1.00 – 1.79
Disagree	1.80 – 2.59
Neutral	2.60 – 3.39
Agree	3.40 – 4.19
Strongly agree	4.20 – 5.00

After obtaining the medians for all constructs using Likert scale, the input of all respondents was analyzed to make a comparison between the trends of providers and users towards understanding the role of service integration in e-government implementation in Jordan. The following results were revealed:

- The attitude of all respondents towards the influence of the current situation on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.

- The attitude of all respondents towards the influence of the managerial factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the cultural factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.5.
- The attitude of all respondents towards the influence of the social factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the political factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the legal factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the technological factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the economic factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.25.

By dividing the sample into providers and users, the following results obtained to express the attitude of providers towards understanding the role of service integration in e-government implementation in Jordan:

- The attitude of all respondents towards the influence of the current situation on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the managerial factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the cultural factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.5.
- The attitude of all respondents towards the influence of the social factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the political factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 4.0.
- The attitude of all respondents towards the influence of the legal factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the technological factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the economic factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.0.

However, the following results obtained to express the attitude of users towards understanding the role of service integration in e-government implementation in Jordan:

- The attitude of all respondents towards the influence of the current situation on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the managerial factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the cultural factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.5.
- The attitude of all respondents towards the influence of the social factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the political factors on understanding the role of service integration in e-government implementation in Jordan is Agree were the median is 3.5.
- The attitude of all respondents towards the influence of the legal factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the technological factors on understanding the role of service integration in e-government implementation in Jordan is Neutral were the median is 3.0.
- The attitude of all respondents towards the influence of the economic factors on understanding the role of service integration in e-government implementation in Jordan is Disagree were the median is 2.5.

Here is a summary of the calculation of medians for all respondents, providers and users in one table (Table 7.20).

Table 7.20: Medians for all respondents, providers and users.

		Current situation	Managerial factors	Cultural factors	Social factors	Political factors	Legal factors	Technological factors	Economic factors
Median	All	3.00	3.50	2.50	3.50	3.50	3.00	3.00	2.25
	Providers	3.00	3.50	2.50	3.50	4.00	3.00	3.00	2.00
	Users	3.00	3.50	2.50	3.50	3.50	3.00	3.00	2.50

It is clear from the table above that the attitude of respondents towards understanding the role of service integration in e-government implementation shows an agreement between providers and users regarding the influence of all studied constructs: current situation (Neutral), managerial factors (Agree), cultural factors (Disagree), social factors (Agree), political factors (Agree), legal factors (Neutral), technological factors (Neutral) and economic factors (Disagree).

The red values in the table above does not reveal any disagreement or any significant differences between the attitude of providers and users towards understanding the role of service integration in e-government implementation because the three red values in each construct have the same weight as shown in table 7.20.

Overall, the whole sample has the same attitude towards understanding the role of service integration in e-government implementation in Jordan.

#### 7.4.3. Finding relationships between type of respondents and their demographic characteristics

In this section, relationships between the type of respondents (providers or users) and their demographic characteristics were examined by applying Pearson Chi Squared independence test on all demographic variables in the study based on the type of respondent whether it was provider or user. This test is beneficial to this study because it tests the independence between the type of respondent whether it was a provider or a

user and each demographic variable for that respondent including gender, age, educational level, IT and internet skills, daily use of internet and average use of e-government services. In other words, it is the perfect statistical tool that can be used to answer the following questions:

- Is there any significant association between the type of respondent and the gender?
- Is there any significant association between the type of respondent and the age?
- Is there any significant association between the type of respondent and the educational level?
- Is there any significant association between the type of respondent and the IT and internet skills?
- Is there any significant association between the type of respondent and the daily use of internet?
- Is there any significant association between the type of respondent and the use of e-government services?

To answer these questions, a set of hypotheses regarding the relationship between the type of respondent and the demographic characteristics including gender, age, educational level, IT and internet skills, daily use of internet and average use of e-government services were identified and tested in order to recognize any similarities or differences between the perception of providers and users towards understanding the role of service integration in e-government implementation in Jordan.

In general, the association between two variables is statistically significant if Asymptotic Significance (2-sided)  $< 0.05$ . Significance is usually characterized by probability ( $p$ ), which is the probability of observing the sample output if the variables are independent for the entire population. Thus, if probability or resulted  $p$  value  $< 0.05$ , the null hypothesis indicating that no significant association between two measured

variables is rejected which means the two measured variables are dependent and the alternate hypothesis indicating association between them is accepted.

The following subsections addresses testing the above-mentioned hypotheses using Pearson Chi Squared independence test with the help of SPSS software.

#### 7.4.3.1. Association between type of respondent and gender

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the gender (male or female):

H0a: There is no significant association between the type of respondent and the gender.

H1a: There is a significant association between the type of respondent and the gender.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $X^2 = 14.403$  and the significance of probability  $p$  value was  $p = 0.000$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis H0a is rejected and therefore, the alternate hypothesis H1a is accepted indicating there is a significant association between the type of respondent and the gender.

#### 7.4.3.2. Association between type of respondent and age

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the age in years (less than 26, between 26 and 50, and more than 50):

H0b: There is no significant association between the type of respondent and the age.

H1b: There is a significant association between the type of respondent and the age.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $x^2 = 177.131$  and the significance of probability value was  $p = 0.000$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis  $H0a$  is rejected and therefore, the alternate hypothesis  $H1a$  is accepted indicating there is a significant association between the type of respondent and the age.

#### 7.4.3.3. Association between type of respondent and educational level

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the educational level (high school or under, college diploma, bachelor, higher diploma, master and PhD):

$H0c$ : There is no significant association between the type of respondent and the educational level.

$H1c$ : There is a significant association between the type of respondent and the educational level.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $x^2 = 77.064$  and the significance of probability value was  $p = 0.000$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis  $H0c$  is rejected and therefore, the alternate hypothesis  $H1c$  is accepted indicating there is a significant association between the type of respondent and the educational level.

#### 7.4.3.4. Association between type of respondent and internet and information technology skills

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the internet and information technology skills (weak, good or excellent):

H0d: There is no significant association between the type of respondent and the internet and information technology skills.

H1d: There is a significant association between the type of respondent and the internet and information technology skills.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $\chi^2 = 34.150$  and the significance of probability value was  $P = 0.000$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis H0d is rejected and therefore, the alternate hypothesis H1d is accepted indicating there is a significant association between the type of respondent and the internet and information technology skills.

#### 7.4.3.5. Association between type of respondent and daily use of internet

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the daily use of internet in years (1 hour or less, 2 or 3 hours, and 4 hours or more):

H0e: There is no significant association between the type of respondent and the daily use of internet.

H1e: There is a significant association between the type of respondent and the daily use of internet.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $x^2 = 4.519$  and the significance of probability value was  $p = 0.104$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0e is failing to reject and therefore, there is no significant association between the type of respondent and the daily use of internet.

#### 7.4.3.6. Association between type of respondent and use of e-government services

The following hypotheses were suggested to identify any relationships or associations between the type of respondents (provider or user) and the use of e-government services (rarely, sometimes, frequently and always):

H0f: There is no significant association between the type of respondent and the use of e-government services.

H1f: There is a significant association between the type of respondent and the use of e-government services.

By applying Pearson Chi Squared independence test using SPSS software to examine the above hypotheses, the obtained value of Pearson Chi Square was  $x^2 = 92.478$  and the significance of probability value was  $p = 0.000$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis H0f is rejected and therefore, the alternate hypothesis H1f is accepted indicating that there is a significant association between the type of respondent and the use of e-government services.

Table 7.21 shows the results of testing all the above hypotheses using Pearson Chi Squared independence test. It presents the value of Pearson Chi Square ( $x^2$ ) and the value of probability ( $p$ ).

Table 7.21: Pearson Chi Square ( $x^2$ ), Probability ( $p$ ) and existence of association for demographic variables based on the type of respondent (provider or user).

<b>Variables</b>	<b>Chi Squared (<math>x^2</math>)</b>	<b>Probability (<math>p</math>)</b>	<b>Associated with the type of respondent?</b>
Gender	14.403	.000	Yes
Age	177.131	.000	Yes
Educational level	77.064	.000	Yes
Internet and IT skills	34.150	.000	Yes
Daily use of internet	4.519	.104	No
E-government services	92.478	.000	Yes

To conclude, it was statistically proven that there is a significant association between the type of respondent and all demographic variables except the daily use of internet which was statistically proved that there is no significant association between the perceptions of providers and users according to their daily use of internet.

#### 7.4.4. Comparison of the perceptions of providers and users towards understanding the role of service integration in e-government implementation in Jordan

In this section, any differences between the perceptions of providers and users towards understanding the role of service integration in e-government implementation in Jordan

were examined by running Mann Whitney U test for all constructs in the study (current situation, managerial, cultural, social, political, legal, technological and economic factors) based on the type of respondent (provider or user).

Mann Whitney U test is a non-parametric test that can be seen as an alternative to Unpaired T test. It is usually employed in studies that aim to test the null hypothesis suggesting that two samples or groups of respondents have the same median's value which means they come from the same population. Therefore, Mann Whitney U test is the perfect statistical tool that can be used to compare the perceptions of providers and users regarding the factors affecting the role of service integration in e-government implementation to find out any differences between them.

In general, the difference between two groups is statistically significant if Asymptotic Significance (2-sided) < 0.05. Significance is usually characterized by probability ( $p$ ), if probability value  $p < 0.05$ , the null hypothesis indicating that no statistical significant differences between the perception of providers and the perception of users is rejected and the alternate hypothesis indicating the existence of statistical significant differences between them is accepted.

Running Mann Whitney U test supposed to provide useful outcomes to answer the following set of questions:

- Are there any statistical differences between the perception of providers and the perception of users regarding current situation of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding managerial factors affecting the role of service integration in e-government implementation in Jordan?

- Are there any statistical differences between the perception of providers and the perception of users regarding cultural factors affecting the role of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding social factors affecting the role of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding political factors affecting the role of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding legal factors affecting the role of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding technological factors affecting the role of service integration in e-government implementation in Jordan?
- Are there any statistical differences between the perception of providers and the perception of users regarding economic factors affecting the role of service integration in e-government implementation in Jordan?

To answer these questions, we suggested a set of hypotheses to make a comparison between the perceptions of providers and users about the factors controlling the role of service integration in e-government implementation in Jordan. These hypotheses were presented and tested in the following subsections by utilizing Mann Whitney U test using SPSS software.

#### 7.4.4.1. Relationship between the perspectives of providers and users regarding current situation of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the current situation of service integration in e-government implementation in Jordan.

H0g: There are no statistical differences between the perception of providers and the perception of users regarding current situation of service integration in e-government implementation in Jordan.

H1g: There are statistical differences between the perception of providers and the perception of users regarding current situation of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 23855.500$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.528$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0g is failed to reject (accepted) and therefore, the perception of providers of the current situation is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of providers regarding the current situation was greater than the perspective of users since the mean rank for providers is 332.44 and the mean rank for users is 319.72. In other words, providers rated the construct of “current situation” more favorably than users.

#### 7.4.4.2. Relationship between the perspectives of providers and users regarding managerial factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the managerial factors affecting the role of service integration in e-government implementation in Jordan.

H0h: There are no statistical differences between the perception of providers and the perception of users regarding managerial factors affecting the role of service integration in e-government implementation in Jordan.

H1h: There are statistical differences between the perception of providers and the perception of users regarding managerial factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 22924.500$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.219$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0i is failed to reject (accepted) and therefore, the perception of providers of the managerial factors is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of providers regarding the managerial factors was greater than the perspective of users since the mean rank for providers is 342.78 and the mean rank for users is 318.03. In other words, providers rated the construct of “managerial factors” more favorably than users.

#### 7.4.4.3. Relationship between the perspectives of providers and users regarding cultural factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the cultural factors affecting the role of service integration in e-government implementation in Jordan.

H0i: There are no statistical differences between the perception of providers and the perception of users regarding cultural factors affecting the role of service integration in e-government implementation in Jordan.

H1i: There are statistical differences between the perception of providers and the perception of users regarding cultural factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 23116.000$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.279$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0j is failed to reject (accepted) and therefore, the perception of providers of the cultural factors is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of users regarding the cultural factors was greater than the perspective of providers since the mean rank for users is 324.62 and the mean rank for providers is 302.34. In other words, users rated the construct of “cultural factors” more favorably than providers.

#### 7.4.4.4. Relationship between the perspectives of providers and users regarding social factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the social factors affecting the role of service integration in e-government implementation in Jordan.

H0j: There are no statistical differences between the perception of providers and the perception of users regarding social factors affecting the role of service integration in e-government implementation in Jordan.

H1j: There are statistical differences between the perception of providers and the perception of users regarding social factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 24428.500$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.795$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0k is failed to reject (accepted) and therefore, the perception of providers of the social factors is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of providers regarding the social factors was greater than the perspective of users since the mean rank for providers is 326.07 and the mean rank for users is 320.75. In other words, providers rated the construct of “social factors” more favorably than users.

#### 7.4.4.5. Relationship between the perspectives of providers and users regarding political factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the political factors affecting the role of service integration in e-government implementation in Jordan.

H0k: There are no statistical differences between the perception of providers and the perception of users regarding political factors affecting the role of service integration in e-government implementation in Jordan.

H1k: There are statistical differences between the perception of providers and the perception of users regarding political factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 20957.500$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.014$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis H0l is rejected and therefore, the alternate hypothesis H1h is accepted indicating that the perception of providers of the political factors is not the same as the perception of users and there are differences between them about this construct.

A Mann Whitney U test indicated that the perspective of providers regarding the political factors was greater than the perspective of users since the mean rank for providers is 364.64 and the mean rank for users is 314.47. In other words, providers rated the construct of “political factors” more favorably than users.

#### 7.4.4.6. Relationship between the perspectives of providers and users regarding legal factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the legal factors affecting the role of service integration in e-government implementation in Jordan.

H0l: There are no statistical differences between the perception of providers and the perception of users regarding legal factors affecting the role of service integration in e-government implementation in Jordan.

H1l: There are statistical differences between the perception of providers and the perception of users regarding legal factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 24634.000$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.892$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0m is failed to reject (accepted) and therefore, the perception of providers of the legal factors is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of users regarding the legal factors was greater than the perspective of providers since the mean rank for users is 321.87 and the mean rank for providers is 319.21. In other words, users rated the construct of “legal factors” more favorably than providers.

#### 7.4.4.7. Relationship between the perspectives of providers and users regarding technological factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the technological factors affecting the role of service integration in e-government implementation in Jordan.

H0m: There are no statistical differences between the perception of providers and the perception of users regarding technological factors affecting the role of service integration in e-government implementation in Jordan.

H1m: There are statistical differences between the perception of providers and the perception of users regarding technological factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 21301.500$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.019$ .

In this case, the  $p$  value  $< 0.05$  which means that the null hypothesis H0n is rejected and therefore, the alternate hypothesis H1n is accepted indicating that the perception of providers of the technological factors is not the same as the perception of users and there are differences between them about this construct.

A Mann Whitney U test indicated that the perspective of providers regarding the technological factors was greater than the perspective of users since the mean rank for providers is 360.82 and the mean rank for users is 315.09. In other words, providers rated the construct of “technological factors” more favorably than users.

#### 7.4.4.8. Relationship between the perspectives of providers and users regarding economic factors affecting the role of service integration in e-government implementation in Jordan

The following hypotheses were suggested to identify any statistical differences between the perspectives of providers and users regarding the economic factors affecting the role of service integration in e-government implementation in Jordan.

H0n: There are no statistical differences between the perception of providers and the perception of users regarding economic factors affecting the role of service integration in e-government implementation in Jordan.

H1n: There are statistical differences between the perception of providers and the perception of users regarding economic factors affecting the role of service integration in e-government implementation in Jordan.

By applying Mann Whitney U test to examine the above hypotheses, the obtained value of Mann Whitney U test was  $U = 22050.000$  and the Asymptotic Significance (2-sided) of probability value was  $p = 0.076$ .

In this case, the  $p$  value  $> 0.05$  which means that the null hypothesis H0o is failed to reject (accepted) and therefore, the perception of providers of the economic factors is the same as the perception of users and there are no differences between them about this construct.

A Mann Whitney U test indicated that the perspective of users regarding the economic factors was greater than the perspective of providers since the mean rank for users is 326.55 and the mean rank for providers is 290.50. In other words, users rated the construct of “economic factors” more favorably than providers.

Table 7.22 shows the results of testing all the above hypotheses using Mann Whitney U test for all constructs under study. It presents the value of Mann Whitney ( $U$ ) and the value of probability ( $p$ ).

Table 7.22: Mann Whitney U test for all the constructs of the study.

<b>Variables</b>	<b>Mann Whitney (<math>U</math>)</b>	<b>Probability (<math>p</math>)</b>	<b>Reject the null hypothesis?</b>
Current situation	23855.500	0.528	No
Managerial factors	22924.500	0.219	No
Cultural factors	23116.000	0.279	No
Social factors	24428.500	0.795	No
Political factors	20957.500	0.014	Yes
Legal factors	24634.000	0.892	No
Technological factors	21301.500	0.019	Yes
Economic factors	22050.000	0.076	No

Based on the above discussion, it was statistically proven that there are significant differences in the perspectives of providers and users about some constructs forming the research model of understanding the role of service integration in e-government implementation in Jordan. These constructs are political factors and technological factors. On the other hand, the null hypotheses were failed to reject (or accepted) for the other factors: current situation, managerial factors, cultural factors, social factors, legal factors and economic factors, so the hypothesis retained indicating that there is no difference between the perception of providers and users.

## 7.5. Summary

A detailed description is provided for analyzing the collected data using quantitative research method through a large-scale questionnaire to validate the proposed research model that was presented earlier in chapter five.

By the help of SPSS software, a set of suitable statistical tests were performed to examine the main constructs of the questionnaire and therefore to fully answer the main research questions related to the key factors making our proposed model. The collected data were statistically analyzed using common statistical techniques including the calculation of Means, Medians, Chi squared and Mann Whitney U test.

The following topics were presented in this chapter: firstly, data preparation for analysis. Secondly, analysis of descriptive statistics obtained for demographic characteristics such as gender, age, educational level, internet and information technology skills, daily use of internet and average use of e-government services. Finally, inferential statistics and statistical tests that applied on the collected data to acquire the perspectives of providers and users.

Next chapter provides interpretation and discussion for the analysis of both parts of mixed method approach including qualitative and quantitative data in order to confirm and approve the final version of the research model.

## **Chapter 8: Discussion of findings and results**

### 8.1. Introduction

This chapter presents an interpretation of the findings from both qualitative and quantitative parts of mixed method approach employed in this study in order to improve our understanding of the role of service integration in e-government implementation in Jordan. This interpretation provides a basis for confirming the proposed research model as a major outcome of this study.

After this introduction, Section 8.2 presents the key findings and results of the study and Section 8.3 introduces a set of recommendations for improving the role of service integration in e-government implementation in Jordan. Section 8.4 provides a summary for the chapter.

### 8.2. Key findings and results of the study

The findings of the qualitative data obtained using interviews were introduced earlier in chapter five to form a solid foundation for constructing the research model, and the results of quantitative data obtained using questionnaires were introduced in chapter seven to validate the proposed research model.

This chapters discusses both qualitative and quantitative results with aim of providing more interpretation and explanation for the constructs of the research model and to put forward a set of recommendations that improve the role of service integration in e-government implementation in Jordan.

The main aim of our model is to increase understanding of the critical factors affecting the role of service integration in e-government implementation in Jordan based on the

perspectives of providers and users of e-government services. The main findings of this study can be summarized in this section as follows:

Evaluating current situation of service integration can be recognized by taking the following aspects in consideration:

- Level of available e-government services.
- Level of e-government official portal.
- Availability of all required information to complete a transaction through e-government portal.
- Ability for direct interaction between government agencies and all involved stakeholders in e-government activities including citizens.
- Online presence of one stop shop to provide all services requested by anyone at anytime from anywhere.
- Level of collaboration between different government agencies based on a set of unified policies and procedures.
- Success of government agencies to keep up with the success of private sector companies in order to provide government services in the same level of efficiency and effectiveness as the services provided by private sector companies through e-commerce.
- Availability of a wide range of integrated services through e-government official portal.
- Availability of a central steering committee to supervise and manage all stages of service integration.
- Availability of continues enhancements and instant updates for information and services provided through e-government official portal.
- Level of awareness of service integration among the public about the benefits they can gain from using integrated services.

- Level of utilizing more new technologies to enhance the overall progress of service integration.

Investigating the attitude of respondents towards understanding the role of service integration in e-government implementation revealed an agreement between providers and users of e-government services regarding the critical factors affecting the current situation of service integration in e-government implementation. They see a neutral or medium impact of current situation factors on the role of service integration in e-government implementation in Jordan.

It was found that e-government service integration in Jordan still face many challenges that need to be considered. At the same time, there are many opportunities that need to be taken into account to ensure the success of transformation from the current situation of service integration into a preferred situation. Challenges and opportunities can be categorized under seven groups of factors based on their nature and relationships among them: managerial factors, cultural factors, social factors, political factors, legal factors, technological factors and economic factors.

In this study, it was found that the attitude of respondents towards understanding the role of service integration in e-government implementation shows an agreement between providers and users regarding the critical factors of service integration. They agree that managerial, social, and political factors have a big or significant impact on the role of service integration in e-government implementation in Jordan.

On the other hand, the participants agree that the cultural and economic factors have a small or insignificant impact on the role of service integration in e-government implementation in Jordan. The participants also considered legal and technological factors to have a neutral or medium impact on the role of service integration in e-government implementation in Jordan.

One of the interesting results about demographic characteristics of the respondents in this study was the high percentage of females interested in integrated services in comparison to males.

This gives an indication that the spread of service integration products can enable women to actively participate in the public activities such as e-voting and contributes to the decision making process by avoiding many cultural and social constraints to gain a wide range of benefits as a result of using integrated services.

Another important aspect was the growing spread of the culture of service integration among the youth which gives an indication to the people controlling e-government projects to give more attention to the development of integrated services. E-government services must be tailored to meet the growing demand of young people.

The people participated in this study were educated and can provide useful opinions about e-government services and their feedback really helped in understanding what people needs from integrated services.

Knowledge of information technology and internet does not imply that the user is using e-government websites to utilize integrated services. The main reason for this is the lack of awareness and marketing for new added services to attract more users.

Similarly, using internet for many hours a day does not mean that users are using e-government services the same way since significant number of participants were familiar with internet and have the skills of information technology, but they were not familiar with e-government services.

The use of e-government official portal need to be spread on a wider scale in order to increase the number of people involved in e-government activities.

Moreover, examining the relationship between the type of respondents whether they are providers or users, and their demographic characteristics revealed the following results:

- There is a significant association between the type of respondents (providers or users) and their gender.
- There is a significant association between the type of respondents (providers or users) and their age.
- There is a significant association between the type of respondents (providers or users) and their educational level.
- There is a significant association between the type of respondents (providers or users) and their knowledge of IT and internet skills.
- There is no significant association between the type of respondents (providers or users) and their daily use of internet.
- There is a significant association between the type of respondents (providers or users) and their use of e-government services.

It is clear from these results that demographic characteristics of respondents have an influence on the perspectives of providers and users of e-government services except for their daily use of internet.

The following results were also extracted about the relationship between the perspective of providers and users regarding different factors affecting the role of service integration in e-government implementation in Jordan:

- The perception of providers is the same as the perception of users regarding the current situation factors and there are no statistical differences between them. However, providers rated the construct of “current situation” more favorably than users.
- The perception of providers is the same as the perception of users regarding the managerial factors and there are no statistical differences between them. However, providers rated the construct of “managerial factors” more favorably than users.

- The perception of providers is the same as the perception of users regarding the cultural factors and there are no statistical differences between them. However, users rated the construct of “cultural factors” more favorably than providers.
- The perception of providers is the same as the perception of users regarding the social factors and there are no statistical differences between them. However, providers rated the construct of “social factors” more favorably than users.
- The perception of providers is not the same as the perception of users regarding the political factors and there are statistical differences between them. However, providers rated the construct of “political factors” more favorably than users.
- The perception of providers is the same as the perception of users regarding the legal factors and there are no statistical differences between them. However, users rated the construct of “legal factors” more favorably than providers.
- The perception of providers is not the same as the perception of users regarding the technological factors and there are statistical differences between them. However, providers rated the construct of “technological factors” more favorably than users.
- The perception of providers is the same as the perception of users regarding the economic factors and there are no statistical differences between them. However, users rated the construct of “economic factors” more favorably than providers.

### 8.3. Recommendations for improving the role of service integration in e-government implementation in Jordan

As result of this study, the following list of recommendations and improvements were suggested:

1. Creating a standardization policy for procedures and protocols among all government agencies.
2. Increasing the ability of e-government to reach the advanced level of e-commerce and private sector companies in delivering e-services to the public.
3. Establishing a central administration for all e-government projects through different government agencies.
4. Spreading public awareness about service integration and encouraging people to use e-government portal.
5. Maintaining continuous development and regular update on e-government official portal to support implementation of service integration.
6. Providing data sharing policies among different government agencies.
7. Spreading awareness among government employees that the implementation of service integration does not threaten their jobs.
8. Developing the infrastructure needed for implementing service integration including software, hardware and network technologies.

#### 8.4. Summary

The findings and results of both qualitative and quantitative parts of mixed method approach employed in this study were presented and discussed in order to improve our understanding of the role of service integration in e-government implementation in Jordan. Additionally, a set of recommendations for improving the role of service integration in e-government implementation in Jordan were presented.

## Chapter 9: Conclusion

### 9.1. Introduction

The previous chapter presented interpretation and discussion for the findings of qualitative and quantitative parts of mixed method approach. It also, established the foundation for approving the final research model that was constructed towards understanding the role of service integration in e-government implementation in Jordan.

In this chapter, a conclusion of the study is presented in seven sections: an introduction in Section 9.1, a general overview of the study in Section 9.2. Section 9.3 presents the main contributions of the study. Section 9.4 addresses ethical considerations and Section 9.5 addresses the limitations of the study. Section 9.6 presents the future research directions, and a summary is provided in Section 9.7.

### 9.2. General overview of the study

The overall aim of this research is to understand the role of service integration in e-government implementation in Jordan. The methodology employed to achieve this aim uses a mixed method approach that combines qualitative interviews and quantitative questionnaires in one study. The use of mixed method approach in addition to the use of extensive literature review helped in addressing a set of specific objectives to achieve the main aim of the study and to attain better understanding of the role of service integration in e-government implementation in Jordan. Therefore, the following specific objectives were met:

1. Investigate the importance of the role of service integration in e-government implementation and assess the current situation in Jordan.

This objective was addressed by presenting the motive for implementation of service integration in e-government in Jordan and introducing its objectives, benefits, challenges and maturity levels reached. This was done by conducting comprehensive literature review to identify main factors affecting service integration in e-government implementations. The obtained factors from the literature were used to form a set of interview questions that were asked during the qualitative part of the study.

2. Construct a model that illustrates the main factors influencing the role of service integration in e-government implementation in Jordan.

This objective was addressed by developing a model that identifies the critical success factors affecting the current situation of service integration in e-government implementation in Jordan based on the collected data from the fieldwork through the interviews. The proposed model was tested, validated and confirmed by the use of a large-scale questionnaire in the quantitative part of the study.

3. Recommend a set of improvements on the role of service integration in e-government implementation in Jordan as an example of a developing country.

This objective was addressed by putting forward a set of recommendations and suggestions to improve the overall situation of service integration in e-government implementation in Jordan. These recommendations and suggestions resulted from the analysis of the collected data through interviews and questionnaires.

Correspondingly, answers to the key research questions have been provided based on the comprehensive literature review and the employment of mixed method approach.

Taking into account the perceptions of providers and users of e-government services regarding the role of service integration in e-government implementation in Jordan, the following research questions have been answered:

RQ1: What is the current situation of service integration in e-government implementation in Jordan?

RQ2: What are the major critical factors influencing the role of service integration in e-government implementation in Jordan?

RQ3: What are the recommendations and improvements that can be suggested to transfer service integration in e-government implementation in Jordan from the current situation into a preferred situation?

The similarities and differences between providers and users regarding the factors influencing the role of service integration in e-government implementation in Jordan were taken into consideration in order to successfully responding to the research questions.

The relationships between the type of participants, whether they were providers or users, and their demographic attributes were also considered in this study to fully understanding the role of service integration in e-government implementation in Jordan.

This research went through different phases to achieve its goals including a variety of methods and techniques, some were qualitative and others were quantitative, some were statistical and others were non-statistical.

The main phases of the research included a comprehensive literature review, a set of fifteen qualitative interviews with experts and specialists from the fieldwork, a construction of the research model, two pilot studies, a quantitative questionnaire, interpretation of research findings, confirmation of the proposed model based on the analysis of results and a set of recommendations for improvement.

The research process started with a comprehensive literature review about e-government, service integration and service integration in e-government implementation in the context of Jordan in order to identify the research theoretical background and to gain essential knowledge about the results of related studies.

Based on the findings of literature review, mixed method approach with both qualitative and quantitative techniques were designed to study the role of service integration in e-

government implementation in Jordan in an attempt to realize better understanding of that role and to study the main factors affecting it.

Mixed method approach supports the use of qualitative interviews to identify the main constructs of the study that were beneficial in creating our research model followed by the use of quantitative questionnaires for validating the proposed research model.

The first phase of the mixed method approach was done by conducting fifteen interviews with experts and specialists in e-government domain in Jordan. Once the qualitative data was collected, the analysis process took place and the findings were used to determine the critical factors affecting the role of service integration in e-government implementation in Jordan.

These critical factors were the key constructs that form the basic building blocks of our research model, so they were categorized into the following groups: current situation, managerial, cultural, social, political, legal, technological, and economic factors. The most important thing about these factors that they combine a double-view perspective about the role of service integration in e-government implementation in Jordan, of both providers and users in the same time.

This was one of the major strengths of our proposed model. Similarities and differences between users' perception and providers' perception about e-government service integration were examined statistically in the quantitative part of the study.

A key phase in the quantitative part of the study was done by formulating the questions and creating the questionnaire that used to test and validate the constructs of the proposed research model. In this phase, the questions were formulated and translated from English to Arabic which is the native language of target audience, also the draft of the questionnaire was reviewed and assessed by seventeen specialists in relevant areas in order to confirm its validity, reliability and scaling before distribution to the target samples in the real-world.

Next, a paper based pilot questionnaire was distributed on a small scale to a sample of forty respondents aiming at testing all study constructs and spotting any errors or difficulties that affect or hinder the research process. The feedback collected from the respondents provided the required information regarding the time needed to complete a response, clarity of questions, questionnaire layout and so on.

In the light of feedback from the first pilot study, the questionnaire was amended and prepared for a second round of piloting. This time, the pilot utilized a web-based questionnaire instead of the paper-based questionnaire that was employed in the previous phase. A sample of forty respondents was selected to respond to the web-based questionnaire where the study measurements were assessed in terms of validity and reliability by the help of SPSS software.

After distributing, collecting, analyzing the pilot questionnaires and making required amendments, an updated version of the web based questionnaire was created and published using Google forms to acquire the responses of providers and users of e-government services on a large scale where the total number of respondents was 642; 90 were providers and 552 were users. As a result, the research model was validated based on analyzing the results and outcomes of the main questionnaires.

Once the quantitative data is collected from all the respondents whether they are providers or users of e-government services, the analysis process started using SPSS software to test the key constructs of the research model and to provide answers to the main research questions. Various statistical techniques were used to analyze the collected data including extracting frequencies and descriptive data in addition to the analysis of Means, Medians, Chi Squared and Mann Whitney U Test.

The results of descriptive statistics and inferential tests were discussed and interpreted taking into account the findings of interviews that were conducted previously in the qualitative part of the study. Moreover, the perspectives of providers and users

regarding the factors controlling the role of service integration in e-government implementation in Jordan were taken into consideration.

A comparison between the responses of providers and users was carried out to extract their attitudes toward the subject under study and to identify associations between their perceptions of the role of service integration in e-government implementation in Jordan. As a result, our proposed model was confirmed leading to produce the final version which was validated by the use of mixed method approach employed throughout different phases of the study.

At the end of the study, a significant set of recommendations to understand and improve the role of service integration in e-government implementation in Jordan was presented.

### 9.3. Contributions of the study

This study is unique in the sense that it covers a comprehensive view of the questions in hand by investigating many elements. It also combines theoretical findings with empirical results and combines qualitative and quantitative approaches in one study. Moreover, it combines the provider perspective with the user perspective all in one study and statistically compares their perspectives about service integration in e-government implementation in Jordan. The value of such a comprehensive study can be summarized in the following points:

- Provide policy makers and developers of e-government service integration with a wholistic understanding of the theoretical findings of the literature and the experts as well as the practical results obtained from the fieldwork.
- Bridge the gap between providers and users of e-government services in order to improve the services provided by government agencies to meet users' needs and

expectations. This will assure the involvement of users in the development of integrated services and therefore increasing users' satisfaction.

- Develop a model that illustrates the main constructs that influence the role of service integration in e-government implementation in Jordan. Which can be used in other studies in the field of information technology.
- Provide a guideline for future studies in the field by adopting the comprehensive aspect of this study.
- Provide recommendations to improve the implementation of service integration in e-government based on the results obtained in this study.

#### 9.4. Ethical considerations

This research complies with Sheffield Hallam University's Code of Research Ethics to avoid any possible risks during the study.

An invitation e-mail was sent to all participants asking them to take part in the study and provide basic information about the research topic including the confidentiality procedures applied to secure all information about participants' names and identities and assure them it will be kept confidential and not reported in any form as a result of this study. All participants have been informed in advance that their participation is voluntary, and they have the right to withdraw from the study at any time. They also briefly introduced to the objectives and expected outcomes of the study in addition to the measures stated to ensure confidentiality.

The interviews and questionnaires were designed in a way that ensures anonymity of the participant. The participants have been advised not to include any personal information to ensure their privacy were guaranteed.

Data analysis reports were written in a general format to avoid any possibility of recognizing the participant's identity. University Research Ethics Committee's contact number and mail address were provided in the attached cover letter. Participants were advised to keep the attached letter so that they could contact the committee if they had any queries or complaints about the study or the way they were approached.

#### 9.5. Limitations of the study

Like any other study, this study has some limitations that did not affect the purpose of this work but can be taken in consideration for future work. Despite the obvious benefits of the comprehensive study, the factors involved in this work were not analyzed individually in depth because this is beyond the scope of this study. The quantitative results of this study were drawn from a sample of participants from the University of Jordan who represents all categories of the Jordanian community as explained in Chapter five, however, the uneducated or illiterate population which is although very small in size, still part of the population of Jordan.

#### 9.6. Future work and directions for further research

Based on the outcomes of this work, various directions for future work can be suggested. This work was done specifically for understanding the role of service integration in e-government implementation in the case of Jordan. Future studies can benefit from the proposed model and methodology to apply and adapt it in other countries with similar conditions.

The aim of this study was to investigate service integration in e-government implementation, similar studies are needed for private sector's implementations such as e-commerce.

As mentioned in the limitation of this study, uneducated and illiterate people from rural areas were not included in this work. Therefore, a dedicated study for this category is needed. The scope and purpose of this study required certain statistical tests. More tests could be carried out for analyzing other aspects of the topic.

### 9.7. Summary

This chapter provides a conclusion of the research conducted to improve the understanding of the role of service integration in e-government implementation in Jordan. The following sections were presented: introduction, a general overview of the study, contributions of the study, ethical considerations, limitations of the study, future research directions and the summary.

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## Appendix 1: Letter from Director of Studies requesting supporting the researcher in his research study.

**Sheffield  
Hallam  
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Pro-Vice Chancellor Roger Eccleston

To Whom It May Concern,

Date:11/04/2016

I write to confirm that Mr Asa'd Mustafa As'ad is a PhD research student within the Cultural, Communication & Computing Research Institute at Sheffield Hallam University – The United Kingdom. He is engaged in research related to his PhD on the topic of 'Understanding the role of service integration in e-government implementation in Jordan'.

As part of his research Asa'd is keen to contact experts and practitioners with experience in these areas with a view to surveying and interviewing them for their responses to his questions and ideas. He will adhere to the ethical guidelines for researchers as set out in the Sheffield Hallam University Research Ethics Policy and Procedures. He will supply all potential survey subjects with the appropriate information and consent forms.

Yours sincerely,



Director of Studies

Dr Babak Khazaei

Senior Lecturer in Software Engineering,

Department of Computing,

9418 Cantor Building,

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## Appendix 2: Interviews' Questions

Interview's questions were categorized into two parts. The first part of questions addresses the demographic information of participants and their roles in e-government program in Jordan (name, gender, age, education, organization and occupation).

The second set of questions addresses the role of service integration in e-government implementation in Jordan. The following are examples of these questions:

Q1. What is your evaluation of e-government program in Jordan and its overall progress?

Q2. What is your evaluation of the current situation of service integration in e-government implementation in Jordan?

Q3. Are you satisfied with the level of e-services provided on the official e-government portal?

Q4. Do you think there is sufficient media awareness of public regarding e-services provided through e-government portal?

Q5. What are the drivers and motivations for design and development of e-government integrated services in Jordan?

Q6. What are the benefits and advantages of implementing e-government services in Jordan?

Q7. What are the obstacles and challenges that hinder the implementation of e-government services in Jordan?

Q8. What are the critical factors affecting the role of service integration in e-government implementation in Jordan?

Q9. Do you have any suggestions or recommendations to improve the service integration in e-government implementation in Jordan?

Q10. Where do you see the service integration in e-government implementation in Jordan after 5 years? And why?

## Appendix 3: Major themes extracted from interviews in Arabic and English

### العوامل الإدارية:

#### Managerial Factors:

- 1- الاختلاف في خطوات إنجاز الخدمة بين المؤسسات الحكومية المختلفة يعيق التكامل في الحكومة الإلكترونية  
Different procedures among government agencies and departments hinder the progress of service integration.
- 2- غياب سياسة تدعم مشاركة البيانات بين المؤسسات الحكومية المختلفة تعيق التكامل في الإلكترونية.  
Absence of data sharing policy among various government agencies and departments hinder the progress of service integration.
- 3- ثقافة مقاومة التغيير تولد تحدي لتطوير خدمات حكومية متكاملة.  
Change resistance issue is a challenge to implement service integration.
- 4- وجود تكامل في خدمات الحكومة الإلكترونية يتطلب مساحة من التعاون والتنسيق بين مختلف مؤسسات الحكومة .  
Service integration requires higher level of coordination and cooperation among various government agencies and departments.
- 5- القناعة بجودة الخدمات المقدمة حالياً يقلل الحماس للتعامل مع خدمات حكومية متكاملة.  
Level of satisfaction with quality of current services minimizes the motivations to use new integrated services.
- 6- انخفاض الثبات النسبي للإجراءات وتغييرها المستمر يعيق تقديم خدمات إلكترونية متكاملة.  
Continuous changes of procedures and workflow hinder the progress of service integration.
- 7- ضعف الحوافز المالية والرواتب يهدد بعدم وجود موظفين أكفاء لتقديم خدمات حكومية إلكترونية متكاملة.  
Shortage of qualified employees as a result to low wages and salaries is a challenge to implement service integration.
- 8- الخوف من الاستغناء عن خدمات الموظفين الحكوميين واستبدالهم بالخدمات الإلكترونية يعيق تقديم خدمات حكومية إلكترونية متكاملة.  
The fear of government employees they might be replaced as a result of service integration adoption.
- 9- زيادة إجراءات التقييم والتدقيق على أداء الموظفين في حال وجود خدمات حكومية إلكترونية متكاملة.  
The fear of government employees they might be easier to be monitored and tracked by management as a result of service integration adoption.

- 10- الخدمات التكاملية في الحكومة الإلكترونية تهدد مصالح بعض الأشخاص المنتفعين من الوضع القائم.  
The fear of people with advantages and pressure groups from losing their advantages when adopting service integration.
- 11- الخدمات التكاملية في الحكومة الإلكترونية تزيد من دقة المتابعات الإدارية.  
Service integration increases the levels of management follow up and keep in touch with employees.
- 12- الخدمات التكاملية في الحكومة الإلكترونية تقلل من مساحة الاجتهاد في اتخاذ القرارات الإدارية.  
Service integration enforces employees to be restricted to predefined procedures without any kind of ability to be creative or suggest options to solve problems.
- 13- الخدمات التكاملية في الحكومة الإلكترونية تزيد من الشفافية في تقديم الخدمات وتمنع الفساد والاستغلال .  
Service integration increases transparency and decreases corruption in government transactions.
- 14- الفجوة بين الموظفين الذي يقدمون الخدمات والمبرمجين للخدمات يعيق تقديم خدمات حكومية إلكترونية تكاملية.  
The gap between government employees who are responsible for providing public services and the programmers who are responsible for implementing and integrating these services hinder adoption of service integration.

#### العوامل الثقافية:

#### Cultural Factors:

- 15- انتشار الانترنت والثقافة الحاسوبية في المجتمع تساعد في تقديم خدمات حكومية متكاملة.  
The spread of computer skills and internet culture will help service integration adoption.
- 16- الوعي المجتمعي بثقافة الحكومة الإلكترونية وأهمية تكامل خدماتها تساعد في انتشار وتطور الخدمات الحكومية المتكاملة.  
Public awareness of electronic government culture and importance of service integration encourage the adoption and spread of service integration.
- 17- تقديم خدمات حكومية متكاملة يحد من انتشار ظاهرة الوساطة والمحسوبية في التعاملات الحكومية.  
Adoption of service integration minimizes favoritism in government transactions.
- 18- ضعف الثقة بالتعاملات الإلكترونية بشكل عام يحد من انتشار وتطور خدمات حكومية متكاملة.  
Public trust in electronic transactions has negative impacts on adoption of service integration.

19- تفضيل الاستمرار في الحصول على الخدمات بشكل تقليدي يحد من انتشار وتطور خدمات حكومية متكاملة.

People preference to gain government services in the same old way comparing to the new ways is a challenge for service integration adoption.

#### العوامل الاجتماعية:

##### **Social Factors:**

20- عدم توفر الحواسيب والانترنت لدى بعض الشرائح الاجتماعية يحد من انتشار وتطور خدمات حكومية متكاملة.

Digital divide issue in the society has negative impacts on adoption of service integration.

21- نوع الجنس له أثر في انتشار وتطور الخدمات الحكومية المتكاملة.

Gender type influences adoption of service integration.

22- مستوى الدخل له أثر في انتشار وتطور الخدمات الحكومية المتكاملة.

Income rate influences adoption of service integration.

23- المستوى التعليمي له أثر في انتشار وتطور الخدمات الحكومية المتكاملة.

Education level influences adoption of service integration.

24- الفئة العمرية لها أثر في انتشار وتطور الخدمات الحكومية المتكاملة.

Age category influences adoption of service integration.

25- الموقع الجغرافي أو مكان السكن له أثر في انتشار وتطور الخدمات الحكومية المتكاملة.

Geographical location influences adoption of service integration.

26- انتشار وتطور الخدمات الحكومية المتكاملة يؤثر سلبا على العلاقات الاجتماعية بين المواطنين.

Adoption of service integration has negative effects on the social life and relationships in the society.

#### العوامل السياسية:

##### **Political Factors:**

27- توفر رؤيا عليا ودعم سياسي على أعلى مستوى في الدولة ماديا ومعنويا يدعم انتشار وتطور خدمات حكومية متكاملة.

Political support from higher levels in the country is essential to successful adoption of service integration.

28- تشكيل لجنة عليا أو لجان متخصصة بتكامل الخدمات الحكومية يدعم انتشار وتطور خدمات حكومية متكاملة.

Selecting a qualified steering committee and specialized committees is essential to successful adoption of service integration.

29- الدعم السياسي الفعال لسن القوانين والتشريعات المتعلقة بالخدمات الحكومية المتكاملة وسرعة انجازها يدعم انتشار وتطور خدمات حكومية متكاملة.

Effective political support to laws and legislations related to service integration adoption and to speed it up.

30- انتشار وتقدم الخدمات الحكومية المتكاملة يشجع المواطنين على المشاركة في الحياة السياسية ويعمل على تطويرها.

Adoption and spread of integrated services encourage people to participate in decision making and political events.

31- تكامل خدمات الحكومة الالكترونية تعتبر من أبرز أولويات السياسيين وصناع القرار في الدولة.

Service integration is considered a priority for politicians and decision makers in the country.

#### العوامل القانونية:

#### Legal Factors:

32- نقص القوانين والتشريعات التي تحكم تقديم خدمات حكومية متكاملة وتساعد في انتشارها وتطورها يشكل تحدياً لانتشار وتطور خدمات حكومية متكاملة.

Shortage of laws and legislations related to service integration is an obstacle to deliver integrated services.

33- وضوح القوانين والتشريعات التي تحكم تقديم خدمات حكومية متكاملة يشكل حافزاً لانتشار وتطور خدمات حكومية متكاملة.

Clarity of laws and legislations related to delivery of integrated services support adoption of service integration.

34- وعي المواطنين بالقوانين والتشريعات الناظمة للتعاملات المتعلقة بالخدمات الحكومية الالكترونية يساعد على انتشار وتطور خدمات حكومية متكاملة.

Public awareness of laws and legislations related to service integration support delivering and spread of integrated services.

35- التعديل والتطوير المستمر للقوانين والتشريعات الناظمة للتعاملات المتعلقة بالخدمات الحكومية الالكترونية يساعد على انتشار وتطور خدمات حكومية متكاملة.

Continuous development and improvements for laws and legislations related to service integration support delivery and spread of integrated services.

36- الحاجة الى وجود بنود قانونية خاصة بحماية البيانات والحفاظ على سرية المستخدمين وامانهم يرفع من ثقة المواطنين بالخدمات الحكومية المتكاملة وسرعة انتشارها.

Need for special laws and legislations related to security and privacy of personal data support delivering and spread of integrated services.

37- سهولة اطلاع المواطنين على القوانين والتشريعات الخاصة بالخدمات الالكترونية وتعاملاتها يساعد على انتشار وتطور خدمات حكومية متكاملة.

Accessibility and availability of laws and regulations by public encourage delivering and spread of integrated services.

38- القضايا القانونية المتعلقة بالخدمات الحكومية المتكاملة تشكل تحديا لانتشار وتطور خدمات حكومية متكاملة.

Legal issues related to service integration is a challenge to adopt and provide integrated services.

#### العوامل التقنية:

#### Technological Factors:

39- صعوبة استخدام الخدمات الحكومية المتكاملة.

Using integrated services is not easy.

40- صعوبة التحقق من هوية وصلاحيات المستخدم.

It is difficult to authenticate users' identity and check authorization and privileges.

41- عدم توفر متطلبات الامن والحماية الالكترونية لمستخدمي الخدمات الحكومية المتكاملة.

Availability of safety and security requirements to protect users of integrated services is a major challenge to adopt service integration.

42- عدم الترابط والتوافق بين الانظمة الحاسوبية المختلفة.

Lack of standards and incompatibility among various information systems is a challenge to adopt service integration.

43- عدم توفر مجموعة كبيرة من الخدمات الالكترونية على بوابة الحكومة الالكترونية.

Absence of a large number of services on official portal for the Jordanian e-government.

44- ضعف البنية التحتية التقنية له تأثير سلبي على سرعة وكفاءة الخدمات الحكومية المتكاملة.

Insufficient infrastructure is a major challenge to adopt service integration.

45- أخذ احتياجات ومتطلبات المواطنين بالاعتبار يرفع من كفاءة الخدمات الحكومية المتكاملة.

Consideration for users' needs and requirements enhance the level of service integration.

46- عدم قدرة المؤسسات الحكومية على مجاراة التطور السريع في القطاع الخاص ومشاريع التجارة الالكترونية.

It is not easy for government sector to keep up comparing to the private sector and e-commerce projects.

- 47- نقص البرمجيات والمعدات والاجهزة اللازمة لدعم خدمات الحكومة الالكترونية.  
Lack of software, hardware and other important tools and devices to implement service integration is an obstacle to achieve higher level of integration.
- 48- الاعطال المستمرة للبرمجيات والمعدات والاجهزة اللازمة لدعم خدمات الحكومة الالكترونية.  
Continuous fatal and malfunction in software, hardware and other important tools and devices required for implementing service integration is an obstacle to achieve a high level of integration.
- 49- تأخر أعمال الصيانة واصلاح الاعطال الفنية للبرمجيات والمعدات والاجهزة اللازمة لدعم خدمات الحكومة الالكترونية.  
Delay in time needed to fix errors and malfunctions for software, hardware and other equipment hinder the deployment of service integration.
- 50- توفر الاحتياطات الامنية اللازمة لمشاركة ونقل البيانات الحكومية الالكترونية.  
Security requirements must be taken into consideration when talking about data sharing and transfer of money and information between multiple agencies to providing integrated services.
- 51- صعوبة تحقيق متطلبات عمليات الدفع الالكتروني المباشر وتنفيذها.  
Challenges to apply electronic payments method hinder the adoption of service integration.
- 52- التحديث المستمر للبيانات والمعلومات بشكل فوري حال حدوثها.  
Instant update for data and information is a major benefit of service integration.
- 53- توفر الكفاءات والخبرات الفنية اللازمة لدى موظفي الحكومة لتصميم وتطوير خدمات حكومية متكاملة.  
Shortage of qualified employees in government sector to develop integrated services is one of the major problem facing service integration.
- 54- الحاجة الدائمة للاستعانة بالقطاع الخاص لتصميم وتطوير خدمات حكومية متكاملة.  
Help needed from the private sector to design and implement integrated services.

#### العوامل الاقتصادية:

#### Economic Factors:

- 55- تكلفة امتلاك جهاز حاسوب أو هاتف ذكي للتعامل مع الخدمات الحكومية المتكاملة مرتفعة.  
The cost of buying computer and smart phone devices needed to use integrated services is a burden to large groups of people in the society.
- 56- تكلفة الاشتراك في خدمة الانترنت للتعامل مع الخدمات الحكومية المتكاملة مرتفعة.

The cost of using internet needed to use integrated services is affordable to large groups of people in the society.

-57 تكلفة تسويق الخدمات الحكومية المتكاملة ونشر الوعي بها لدى المستخدمين مرتفعة.

The cost of marketing and spreading awareness of integrated services to the public is a burden on government budget.

-58 تكلفة تدريب وتأهيل الموظفين الحكوميين للتعامل مع الخدمات الحكومية المتكاملة مرتفعة.

The cost of providing required training to the government employees involved in service integration development and implementation is a burden on government budget.

-59 التمويل المخصص لمشروع الحكومة الالكترونية عموما وتكامل الخدمات الحكومية خصوصا غير كاف.

Allocated funds and recourses by government to implement and provide integrated services are not sufficient and need to be increased.

-60 البنية التحتية اللازمة لدعم خدمات الحكومة الالكترونية من برمجيات ومعدات وأجهزة وشبكات تشكل عبئا اقتصاديا كبيرا على الحكومة.

The high cost of infrastructure and networking equipment such as software and hardware is a burden on government budget.

-61 تكلفة تصميم وتطوير وتنفيذ الخدمات الحكومية المتكاملة مرتفعة وتشكل عبئا اقتصاديا كبيرا على الحكومة.

The high cost of development and implantation of integrated services is a burden on the government budget.

-62 تكلفة الدعم الفني وصيانة البنية التحتية اللازمة للخدمات الحكومية المتكاملة مرتفعة وتشكل عبئا اقتصاديا كبيرا على الحكومة.

The high cost of maintenance and technical support for infrastructure required to sustain integrated services is a burden on government budget.

-63 تحقيق المتطلبات والشروط القانونية الداعمة للخدمات الحكومية المتكاملة مكلفة وتشكل عبئا اقتصاديا اضافيا على الحكومة.

The high cost of meeting legal conditions and criteria that supports the implementation of service integration is a burden on government budget.

## Appendix 4: The questionnaire's evaluation form sent to reviewers (in Arabic)

### تحكيم استبانة

يقوم الباحث بإجراء دراسة بعنوان "فهم دور تكامل الخدمات في تطبيق الحكومة الإلكترونية في الأردن"، وذلك استكمالاً لمتطلبات الحصول على درجة الدكتوراة في الحاسوب من جامعة شيفلد هالام في المملكة المتحدة. ولتحقيق أهداف الدراسة والاجابة عن أسئلتها الرئيسية تم تصميم استبانة تتكون من قسمين:

- القسم الأول: يتكون من ستة فقرات تعكس البيانات الأولية والخصائص الشخصية والديموغرافية لأفراد عينة الدراسة.

- القسم الثاني: يتكون من ثلاثة وستين فقرة مقسمة على تسعة محاور تعكس النظرة الحالية والمستقبلية لتكامل خدمات الحكومة الإلكترونية في الأردن والعوامل المؤثرة فيه من وجهة نظر الموظفين الحكوميين المعنيين بتقديم الخدمات للمواطنين ومن وجهة نظر المواطنين المتعلمين والقادرين على استخدام الانترنت للاستفادة من هذه الخدمات. فيما يلي المحاور التسعة للاستبانة:

- المحور الاول يشمل الفقرات (1-5) وتقيس مستوى الوضع القائم حالياً.
- المحور الثاني يشمل الفقرات (6-9) وتقيس مستوى الوضع المأمول مستقبلاً.
- المحور الثالث يشمل الفقرات (10-22) وتقيس العوامل الإدارية.
- المحور الرابع يشمل الفقرات (23-27) وتقيس العوامل الثقافية.
- المحور الخامس يشمل الفقرات (28-33) وتقيس العوامل الإجتماعية.
- المحور السادس يشمل الفقرات (34-36) وتقيس العوامل السياسية.
- المحور السابع يشمل الفقرات (37-41) وتقيس العوامل القانونية.
- المحور الثامن يشمل الفقرات (42-54) وتقيس العوامل التقنية.
- المحور التاسع يشمل الفقرات (55-63) وتقيس العوامل الإقتصادية.

وقد تم اعتماد مقياس ليكارت الخماسي لقياس اتجاه آراء الباحثين بحيث تكون الإجابة على كل فقرة واحدة من 5 خيارات أو درجات حيث الدرجة "5" تعني موافق بشدة والدرجة "1" تعني معارض بشدة كما هو موضح بالجدول التالي:

جدول: مقياس ليكارت المستخدم في الاستبانة

التصنيف	معارض بشدة	معارض	محايد	موافق	موافق بشدة
الدرجة	1	2	3	4	5

لذا أرجو منكم التكرم بالإطلاع على فقرات الإستبانة وأبداء الرأي بمدى انتمائها للمحور الذي وضعت فيه وملائمتها لقياسه ودرجة وضوحها وسلامتها اللغوية.

كما أرجو اضافة أي ملاحظات أو اقتراحات تتعلق بمدى تسلسل وكفاية الفقرات لتغطية كل محور من المحاور الأساسية لأداة الدراسة و أي تعديل أو حذف أو اضافة للفقرات وكذلك إبداء الرأي بالبيانات الأولية (الخصائص الشخصية والديموغرافية المطلوبة من الباحثين) ومدى ملائمة مقياس ليكارت الخماسي المستخدم في الاستبانة.

مع خالص الشكر والتقدير.

الباحث

أسعد مصطفى أسعد

القسم الأول : معلومات عامة :

1. الجنس :

ذكر  أنثى

2. العمر (بالسنوات) :

أقل من 25  25-34  35-44  45-54  55 فأكثر

3. المؤهل العلمي (أعلى مؤهل سواء حصل عليه أو لازال على مقاعد الدراسة للحصول عليه):

ثانوي  دبلوم  بكالوريوس  دبلوم عال  ماجستير   
دكتورة

4. مهارات استخدام الحاسوب والانترنت :

ضعيف  متوسط  جيد  جيد جدا  ممتاز

5. معدل الاستخدام اليومي للانترنت (بالساعات):

1 أو أقل  2  3  4  5 أو أكثر

6. معدل استخدام المواقع الالكترونية الحكومية:

نادرا  أحيانا  غالبا  دائما

القسم الثاني : أسئلة الدراسة :

وضوح الصياغة		سلامة اللغة		الانتماء للمحور		فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى ما يلي:
واضحة	غير واضحة	سليمة	غير سليمة	ينتمي	لا ينتمي	
						[1] مستوى تقدم وتطور خدمات الحكومة الإلكترونية جيد.
						[2] مستوى تقدم وتطور البوابة الرسمية للحكومة الإلكترونية جيد.
						[3] إمكانية الحصول على كافة المعلومات المتعلقة بالمعاملات والجراءات الحكومية عبر البوابة الرسمية للحكومة الإلكترونية.
						[4] إمكانية التفاعل المباشر بين المواطنين والجهات الحكومية المعنية عبر البوابة الرسمية للحكومة الإلكترونية.
						[5] إمكانية إجراء المعاملات الحكومية الكترونيا بشكل كامل من الالف الى الياء عبر البوابة الرسمية للحكومة الإلكترونية.
						[6] ضرورة تشكيل لجنة مركزية عليا ولجان فرعية متخصصة بتكامل خدمات الحكومة الإلكترونية.
						[7] ضرورة تبني وتطوير تكامل خدمات الحكومة الإلكترونية.

وضوح الصياغة		سلامة اللغة		الانتماء للمحور		فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى ما يلي:
واضحة	غير واضحة	سليمة	غير سليمة	تتعلق	لا تتعلق	
						[8] ضرورة تطوير البوابة الرسمية للحكومة الالكترونية لدعم تكامل الخدمات.
						[9] ضرورة زيادة التوعية الاعلامية وتشجيع المواطنين على الاستخدام.
						[10] اختلاف خطوات تقديم وانجاز الخدمة بين المؤسسات الحكومية.
						[11] توافر سياسات تدعم مشاركة البيانات بين المؤسسات الحكومية.
						[12] انتشار ثقافة مقاومة التغيير في المؤسسات الحكومية.
						[13] وجود قناعة لدى البعض بجودة الخدمات الحالية وعدم الحاجة للتغيير.
						[14] عدم ثبات الإجراءات الادارية وتغيرها بشكل مستمر.
						[15] تزايد هجرة الخبرات والكفاءات المؤهلة خارج القطاع الحكومي نتيجة ضعف الرواتب وقلة الحوافز المادية.
						[16] وجود فجوة واضحة بين الموظفين المعنئين بتقديم الخدمات الحكومية ومبرمجي هذه الخدمات.
						[17] تخوف الموظفين الحكوميين من الاستغناء عنهم.
						[18] تطوّر إجراءات التدقيق والرقابة على الموظفين الحكوميين.
						[19] تهديد مصالح المنتفعين من الوضع القائم.
						[20] زيادة سرعة و دقة المتابعات الإدارية للمعاملات الحكومية.
						[21] انخفاض حيز الاجتهاد في اتخاذ القرار على جميع المستويات الإدارية.
						[22] زيادة شفافية الإجراءات الحكومية والحد من الفساد المالي والاداري .
						[23] انتشار ثقافة تكنولوجيا المعلومات ومهارات الانترنت في المجتمع.
						[24] انتشار الوعي المجتمعي بالحكومة الالكترونية وأهمية تكامل خدماتها.
						[25] انخفاض ظاهرة الوساطة والمحسوبية في التعاملات الحكومية.
						[26] ضعف ثقة المواطنين بالتعاملات الالكترونية.
						[27] تفضيل المواطنين للطرق التقليدية وعدم تقبل الثقافة الالكترونية.
						[28] عدم توافر الحواسيب وخدمات الانترنت لدى بعض الشرائح الاجتماعية.
						[29] الموقع الجغرافي أو مكان اقامة المستخدم عامل أساسي في تبني الخدمات المتكاملة.
						[30] فئة عمر المستخدم عامل أساسي في تبني الخدمات المتكاملة.
						[31] مستوى تعليم المستخدم عامل أساسي في تبني الخدمات المتكاملة.
						[32] مستوى دخل المستخدم عامل أساسي في تبني الخدمات المتكاملة.
						[33] نوع جنس المستخدم (ذكر أو أنثى) عامل أساسي في تبني الخدمات المتكاملة.

وضوح الصياغة		سلامة اللغة		الانتماء للمحور		فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى ما يلي:
				تتعلق	لا تتعلق	
واضحة	غير واضحة	سليمة	غير سليمة			
						[34] توافر رؤيا عليا ودعم سياسي ماديا ومعنويا.
						[35] وجود تكامل خدمات الحكومة الالكترونية على سلم أولويات السياسيين وصناع القرار في الدولة.
						[36] وجود دعم سياسي فعال لاقرار القوانين والتشريعات ذات العلاقة.
						[37] النقص الواضح في القوانين والتشريعات ذات العلاقة.
						[38] وضوح القوانين والتشريعات ذات العلاقة.
						[39] ارتفاع درجة وعي المواطنين بالقوانين والتشريعات ذات العلاقة.
						[40] التطوير و التحديث المستمر للقوانين والتشريعات ذات العلاقة.
						[41] سهولة اطلاع المواطنين على القوانين ذات العلاقة.
						[42] صعوبة الاستخدام عامل أساسي في تبني الخدمات المتكاملة.
						[43] صعوبة التحقق من هوية وصلاحيات المستخدم عامل أساسي في تبني الخدمات المتكاملة.
						[44] توافر متطلبات الأمن والحماية اللازمة لمشاركة ونقل البيانات بين المؤسسات الحكومية و عبر الانترنت.
						[45] وجود توافق وترابط بين الأنظمة الحاسوبية في المؤسسات الحكومية.
						[46] توافر مجموعة كبيرة من الخدمات الالكترونية المتكاملة على البوابة الرسمية للحكومة الالكترونية.
						[47] ضعف البنية التحتية ونقص البرمجيات والمعدات اللازمة.
						[48] عدم قدرة المؤسسات الحكومية على مجاراة التطور السريع في القطاع الخاص ومشاريع التجارة الالكترونية.
						[49] الأعطال المستمرة في البرمجيات والمعدات.
						[50] تأخر أعمال الصيانة وإصلاح الأعطال الفنية والتقنية.
						[51] صعوبة انجاز وتنفيذ متطلبات الدفع الالكتروني المباشر.
						[52] تحديث البيانات والمعلومات أولا بأول وبشكل متزامن حال حدوثها.
						[53] توافر مبرمجين أكفاء وكوادر مؤهلة وكافية في المؤسسات الحكومية.
						[54] الحاجة الدائمة للاستعانة بمبرمجي القطاع الخاص لتصميم وتطوير خدمات الحكومة الالكترونية المتكاملة.
						[55] ارتفاع كلفة امتلاك الحواسيب والهواتف الذكية بالنسبة للمستخدمين.
						[56] ارتفاع كلفة الاشتراك في خدمات الانترنت بالنسبة للمستخدمين.
						[57] ارتفاع كلفة تسويق الخدمات المتكاملة ونشر الوعي بها لدى المستخدمين.
						[58] ارتفاع كلفة تدريب وتأهيل الموظفين الحكوميين المعنيين.
						[59] نقص التمويل المخصص لمشروع الحكومة الالكترونية عموما وتكامل خدمات الحكومة الالكترونية خصوصا.
						[60] ارتفاع كلفة توفير البنية التحتية اللازمة.

وضوح الصياغة		سلامة اللغة		الانتماء للمحور		فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى ما يلي:
واضحة	غير واضحة	سليمة	غير سليمة	تتعلق	لا تتعلق	
						[61] ارتفاع كلفة تصميم وتطوير خدمات الحكومة الإلكترونية المتكاملة.
						[62] ارتفاع كلفة الدعم الفني والصيانة الدورية للبنية التحتية.
						[63] ارتفاع كلفة تحقيق المتطلبات والشروط القانونية الناظمة لتكامل خدمات الحكومة الإلكترونية.

مدى تسلسل الفقرات:  متسلسلة  غير متسلسلة

ملاحظات: .....

مدى كفاية الفقرات لتغطية كل محور:  كافية  غير كافية

ملاحظات: .....

مدى ملائمة البيانات الأولية المستخدمة:  ملائمة  غير ملائمة

ملاحظات: .....

مدى ملائمة المقياس المستخدم:  ملائم  غير ملائم

ملاحظات: .....

الفقرات المقترحة تعديلها (ان وجد):

رقم الفقرة	التعديل	السبب

الفقرات المقترحة حذفها (ان وجد):

رقم الفقرة	السبب

الفقرات المقترحة اضافتها (ان وجد):

المحور	الفقرة	السبب

اقتراحات وتوصيات اضافية:

.....  
.....  
.....

الاسم: ..... التوقيع: .....

## Appendix 5: English version of the questionnaire

### Understanding the role of service integration in e-government implementation in Jordan

Dear Participant,

Greetings,

The researcher is conducting a study entitled "Understanding the role of service integration in e-government implementation in Jordan" in order to fulfill the requirements for obtaining a doctorate degree in computer science from Sheffield Hallam University in the UK. Given the importance of the role played by the service integration in e-government, our aim is to assess the current and desired status of the integration of e-government services in Jordan, as well as to identify the most important contributing factors like administrative, cultural, social, political, legal, technical and economic from the participants' point of view. In order to achieve the objectives of the study, a questionnaire was designed. It has two parts:

- Section\_1: Addresses personal and demographic information of the participants.
- Section\_2: Addresses the current situation, and the future vision of the integration of e - government services in Jordan including the factors related to it.

The answer to each of the sections will be given in five options where "5" means strongly agree and "1" means strongly disagree as shown in the following table:

Category	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree
Scale	1	2	3	4	5

We thank you for your efforts and hope that you will answer all sections of this questionnaire noting that all answers will be used for the purpose of scientific research only.

with all gratitude and appreciation.

**Researcher**

**Asa'd Mustafa As'ad**

The official website of the e-government in Jordan: <http://www.jordan.gov.io>

**Section I: General Information:** Please check the appropriate answer that describes you:

1. Gender

- Male
- Female

2. Age (years):

- Less than 26
- 26-50
- More than 50

3. Educational Qualification (highest qualification, whether obtained or still in school):

- High school or below
- College Diploma
- Bachelor
- Higher Diploma
- Master
- Ph.D.

4. Computer and Internet skills:

- Weak
- Good
- Excellent

5. Use of the internet (in hours):

- One hour or less
- Two to three Hours
- More than four hours

6. Use of government websites:

- Rarely
- Sometimes
- Frequently
- Always

**Section II: Study Questions:** Please tick the appropriate answer that reflects your opinion:

<b>Regarding service integration in e-government implementation in Jordan, I see the following:</b>	<b>Strongly disagree</b>	<b>disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
There is an improvement in the level of available e-government services					
There is an improvement in the level of official e-government portal					
It is possible to reach all government information using the official e-government portal					
It is possible to communicate directly between government and public via official e-government portal					
It is possible to fully complete all transactions through the e-government webpage.					
There is no need for standardization of procedures and protocols of different government agencies					
The e-government agencies are able to reach the advanced level reached by e-commerce and private sector					
There is a considerable number of e-government services on the official e-government portal					
There is a central administration for e-government projects throughout all government agencies					
There is continuous development and regular update to support implementation of service integration					
There is public awareness about service integration and encouraging people to use e-government portal					
There is hope for rapid enhancements on service integration in the forthcoming years					
It is important to provide policies to support data sharing between government agencies					
There is no fear of change for government employees affecting the e-government services					
The administrative policies in government agencies are fixed and they are not frequently changed					
There is no shortage of qualified employees due low wages and lack of incentives in government agencies.					
Government employees do not fear losing their jobs as a result of implementation of integrated services					
The e-government services integration does not imply higher level of monitoring the work of government employees					
The e-government service integration does not threaten the advantages of those who benefit from keeping the current situations unchanged					
The e-government service integration implies better efficiency in monitoring the progress of government transactions					
The e-government service integration limits the level of human freedom in the administrative decisions					

<b>Regarding service integration in e-government implementation in Jordan, I see the following:</b>	<b>Strongly disagree</b>	<b>disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
The e-government service integration provides higher level of transparency					
There are good internet skills and e-culture in the society					
There is awareness about the existence of the e-government in Jordan					
There is no lack of trust in the e-services (preferring the traditional or paper based way)					
Educational level is an important factor for using e-government services					
Using integrated e-government services limits the role of favoritism due connections					
There is no limited computer and internet access for certain social groups like elderly and those with special needs					
The geographic location of the user is an important factor for using e-government integrated services					
The age range is an important factor for using e-government integrated services					
The gender is an important factor for using e-government integrated services					
The use of e-government integrated service and the ability of doing transactions from home does not weaken the social bond in the community					
There is a clear vision and support from highest political levels for implementation of service integration in e-government					
There is evident enhancement of democratic practices through the modern e-services like e-voting and the ability to communicate directly with people in charge through e-mails					
There is no drawback in the development of service integration due to the unstable political situation in the region.					
There is effective political support to speed up all operations and activities related to the development of service integration					
There are enough rules and regulations regarding e-government service integrations					
The current rules and regulations regarding e-government integration services are clear					
Citizens are aware of the relevant rules and regulations regarding e-government service integration					
There is continuous update for the relevant rules and regulations regarding e-government services					
The relevant rules and regulations are available and easy to find					
It is not difficult for the government agency to identify the identity of the user and his/her eligibility					
It is safe and secure to share and transfer data online to the government agencies					
There is agreement and connection between the information systems used in the different government agencies					

<b>Regarding service integration in e-government implementation in Jordan, I see the following:</b>	<b>Strongly disagree</b>	<b>disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
There is sufficient infrastructure including software, hardware and network technologies					
There is no frequent system failure or malfunctioning in software, hardware and other important tools and devices required					
There are no frequent delays in fixing errors and malfunctions of software, hardware and other important tools and devices					
There are no delays in updating the information					
There is no difficulty in performing e-payments due to lack technical requirements					
There is no shortage of experienced programmers and qualified staff in government agencies					
Providing the needed infrastructure including software, hardware and network technologies is very costly					
Developing and implementing the integrated service is very costly					
Regular maintenance and technical support for infrastructure required to sustain service integration is very costly					
Training government employees involved in the development and implementation of service integration is very costly					
Marketing and spread awareness of service integration among people in the society is very costly					
Owning personal computers and smart phones for citizens is very costly					
Internet subscription for citizens is very costly					
The low-income of citizens decrease the use of e-government integrated services					

## Appendix 6: Arabic version of the questionnaire

### فهم دور تكامل الخدمات في تطبيق الحكومة الإلكترونية في الأردن

عزيزي المشارك / عزيزتي المشاركة

تحية طيبة وبعد ،،

يقوم الباحث بإجراء دراسة بعنوان "فهم دور تكامل الخدمات في تطبيق الحكومة الإلكترونية في الأردن" وذلك استكمالاً لمتطلبات الحصول على درجة الدكتوراه في الحاسوب من جامعة شيفلد هالام في المملكة المتحدة. ونظرًا لأهمية الدور الذي يلعبه تكامل الخدمات في الحكومة الإلكترونية فإننا نهدف من هذه الدراسة إلى الوقوف على مستوى تكامل خدمات الحكومة الإلكترونية في الأردن حاليًا والوضع المأمول به مستقبلاً، بالإضافة إلى التعرف إلى أهم العوامل الإدارية والثقافية والاجتماعية والسياسية والقانونية والتقنية والاقتصادية الفاعلة فيه من وجهة نظر المشاركين. ولتحقيق أهداف الدراسة والإجابة عن أسئلتها الرئيسية تم تصميم استبانة تتكون من قسمين:

- القسم الأول: يتناول الخصائص الشخصية والديموغرافية للمشاركين.

- القسم الثاني: يتناول الواقع الحالي، والرؤية المستقبلية لتكامل خدمات الحكومة الإلكترونية في الأردن والعوامل المتعلقة فيه.

وقد تم اعتماد مقياس ليكرت الخماسي لقياس اتجاه آراء المشاركين، بحيث تكون الإجابة على كل فقرة واحدة من 5 خيارات أو درجات حيث الدرجة "5" تعني موافق بشدة والدرجة "1" تعني معارض بشدة كما هو موضح بالجدول التالي:

التصنيف	معارض بشدة	معارض	محايد	موافق	موافق بشدة
الدرجة	1	2	3	4	5

ونحن إذ نأخذ من وقتكم فإننا نشكركم على جهودكم ونأمل منكم الإجابة على جميع فقرات هذه الاستبانة علماً أن كل ما تتضمنه يستخدم لأغراض البحث العلمي فقط.

مع خالص الشكر والتقدير.

الباحث

أسعد مصطفى أسعد

الموقع الرسمي لبوابة الحكومة الإلكترونية الأردنية: <http://www.jordan.gov.jo>

القسم الأول : معلومات عامة : الرجاء وضع علامة الصح (√) في المربع الفارغ الذي يعبر عنك:  
1. الجنس :

ذكر  أنثى

2. العمر (بالسنوات) :

أقل من 26  26-50  أكبر من 50

3. المؤهل العلمي (أعلى مؤهل حصل عليه أو لا يزال على مقاعد الدراسة للحصول عليه):

الثانوي فما دون  الدبلوم  البكالوريوس

الدبلوم العالي  الماجستير  الدكتوراه

4. مهارات استخدام الحاسوب والإنترنت:

ضعيف  جيد  ممتاز

5. الاستخدام اليومي للإنترنت:

ساعة أو أقل  ساعتين إلى ثلاث  أربعة ساعات فأكثر

6. استخدام المواقع الالكترونية الحكومية:

نادراً  أحياناً  غالباً  دائماً

القسم الثاني : الواقع الحالي والرؤية المستقبلية لتكامل خدمات الحكومة الإلكترونية في الأردن  
وأهم العوامل المتعلقة به:

فيما يلي مجموعة من العبارات المصممة بطريقة يمكنك من تحديد درجة اتفاقك أو اختلافك مع الأفكار الواردة فيها، علماً انه لا يوجد إجابات نموذجية أو صحيحة لهذا النوع من الأسئلة. الرجاء وضع علامة الصح (√) في المربع الفارغ الذي يعبر عن مدى اتفاقك أو اختلافك مع العبارة المقابلة:

موافق بشدة	موافق	محايد	معارض	معارض بشدة	فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى:
					[1] تقدماً وتطوراً ملحوظاً في مستوى خدمات الحكومة الإلكترونية.
					[2] تقدماً وتطوراً ملحوظاً في بوابة الحكومة الإلكترونية كالتصميم وسهولة الاستخدام وعدد الخدمات الإلكترونية المتكاملة.
					[3] إمكانية الحصول على جميع المعلومات المتعلقة بالمعاملات والإجراءات الحكومية من خلال بوابة الحكومة الإلكترونية.
					[4] إمكانية التفاعل الفوري المباشر بين المواطنين والجهات الحكومية المعنية عبر بوابة الحكومة الإلكترونية.
					[5] إمكانية إجراء المعاملات الحكومية إلكترونياً بشكل كامل من بدايتها إلى نهايتها عبر بوابة الحكومة الإلكترونية.

موافق بشدة	موافق	محايد	معارض	معارض بشدة	فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى:
					[6] ضرورة تشكيل لجنة مركزية عليا يبنثق منها لجان فرعية متخصصة لمتابعة تنفيذ جميع مراحل تكامل خدمات الحكومة الإلكترونية.
					[7] حاجة بوابة الحكومة الإلكترونية لتطوير مستمر وتحديث دوري لدعم تنفيذ تكامل خدمات الحكومة الإلكترونية.
					[8] زيادة التوعية الإعلامية من قبل الحكومة وتشجيعها المواطنين على الاستفادة من الخدمات المقدمة عبر بوابة الحكومة الإلكترونية.
					[9] عدم توحيد خطوات وإجراءات تقديم الخدمات وإنجاز المعاملات نتيجة غياب التنسيق بين المؤسسات الحكومية المختلفة.
					[10] عدم قدرة المؤسسات الحكومية على مجاراة التطور السريع في شركات القطاع الخاص ومشاريع التجارة الإلكترونية.
					[11] توفر مجموعة كبيرة من الخدمات المتكاملة على البوابة الرسمية للحكومة الإلكترونية.
					[12] السنوات القادمة تحمل تحسينات سريعة على خدمات الحكومة الإلكترونية تواكب التطورات التكنولوجية.
					[13] ضرورة توفير سياسات إدارية تدعم مشاركة البيانات بين المؤسسات الحكومية المختلفة.
					[14] انتشار ثقافة مقاومة التغيير والرّضا بالخدمات المقدمة حاليًا لدى بعض المسؤولين والموظفين الحكوميين.
					[15] عدم ثبات الإجراءات الإدارية في المؤسسات الحكومية وتغيّرها المستمر.
					[16] هجرة الخبرات والكفاءات الحكومية المؤهلة نتيجة ضعف الرواتب وقلة الحوافز المادية.
					[17] تخوف بعض الموظفين الحكوميين من الاستغناء عنهم نتيجة حوسبة الخدمات الحكومية وتكاملها.
					[18] تطوّر إجراءات التدقيق والرقابة الإلكترونية على الموظفين الحكوميين.
					[19] تهديد مصالح بعض المتنفذين والمنتهجين من بقاء الوضع على حاله.
					[20] زيادة كفاءة وفاعلية المتابعات الإدارية للمعاملات الحكومية من حيث السرعة والدقة نتيجة تفعيل الخدمات الإلكترونية المتكاملة.
					[21] انخفاض حيز الاجتهاد في اتخاذ القرارات على جميع المستويات الإدارية نتيجة تفعيل الخدمات الإلكترونية المتكاملة.
					[22] ازدياد شفافية الإجراءات الحكومية والحد من الفساد المالي والإداري نتيجة تفعيل الخدمات الإلكترونية المتكاملة.
					[23] ضعف انتشار الثقافة الإلكترونية ومهارات الإنترنت في المجتمع.
					[24] ضعف انتشار الوعي المجتمعي بالحكومة الإلكترونية وخدماتها المتكاملة.
					[25] ضعف ثقة المواطنين بالتعاملات الإلكترونية وتفضيل التعامل بالوثائق والمستندات المحسوسة.
					[26] ارتفاع مستوى تعليم المواطن عامل أساسي للتعامل بالخدمات الإلكترونية المتكاملة.
					[27] انخفاض ظاهرة الوساطة والمحسوبية في التعاملات الحكومية نتيجة تفعيل الخدمات الإلكترونية المتكاملة.
					[28] نقص الحواسيب وخدمات الإنترنت لدى بعض الشرائح الاجتماعية كالفقراء وكبار السن وذوي الاحتياجات الخاصة وسكان المناطق النائية.
					[29] الموقع الجغرافي أو مكان إقامة المستخدم عامل مهم للتعامل بالخدمات الإلكترونية المتكاملة.
					[30] الفئة العمرية للمستخدم عامل مهم للتعامل بالخدمات الإلكترونية المتكاملة.
					[31] جنس المستخدم (ذكر أو أنثى) عامل مهم للتعامل بالخدمات الإلكترونية المتكاملة.
					[32] إضعاف الروابط الاجتماعية وتراجع التواصل بين المواطنين نتيجة تفعيل الخدمات الإلكترونية المتكاملة وإمكانية إنجاز المعاملات كاملة من المنزل.
					[33] توفر رؤيا عليا ودعم سياسي من مراكز صنع القرار في الدولة لتفعيل الخدمات الإلكترونية المتكاملة.

موافق بشدة	موافق	محايد	معارض	معارض بشدة	فيما يتعلق بتكامل خدمات الحكومة الإلكترونية في الأردن أرى:
					[34] تعزيز التوجهات الديمقراطية من خلال الأدوات والوسائل الحديثة كالتصويت الإلكتروني والتواصل المباشر مع المسؤولين لتقديم الشكاوى.
					[35] تراجع تكامل خدمات الحكومة الإلكترونية نتيجة الأوضاع السياسية المضطربة في المنطقة.
					[36] وجود دعم سياسي حقيقي وفعال من مراكز صنع القرار في الدولة كتوفير التمويل اللازم وإقرار القوانين والتشريعات ذات العلاقة.
					[37] عدم كفاية القوانين والتشريعات ذات العلاقة.
					[38] عدم وضوح القوانين والتشريعات المتوفرة حالياً.
					[39] ارتفاع درجة وعي المواطنين بالقوانين والتشريعات ذات العلاقة.
					[40] التطوير و التحديث المستمر للقوانين والتشريعات ذات العلاقة لمواكبة التطورات التكنولوجية السريعة.
					[41] سهولة وصول المواطنين واطلاعهم على القوانين والتشريعات ذات العلاقة.
					[42] صعوبة تحقق الجهة الحكومية المعنية بتقديم الخدمة الإلكترونية من هوية وصلاحيات المستخدم.
					[43] توفر متطلبات الأمن والحماية اللازمة لمشاركة ونقل البيانات عبر الإنترنت وبين المؤسسات الحكومية.
					[44] توافق وترابط الأنظمة الحاسوبية المستخدمة في المؤسسات الحكومية المختلفة.
					[45] ضعف البنية التحتية ونقص البرمجيات والمعدات اللازمة لتفعيل الخدمات الإلكترونية المتكاملة.
					[46] الأعطال المتكررة في البرمجيات والمعدات والشبكات اللازمة.
					[47] تأخر أعمال الصيانة وإصلاح الأعطال الفنية في البرمجيات والمعدات والشبكات اللازمة.
					[48] عدم تحديث البيانات والمعلومات أولاً بأول وبشكل متزامن حال حدوثها.
					[49] صعوبة تنفيذ عمليات الدفع الإلكتروني المباشر لإتمام الخدمة الإلكترونية كاملة نظراً لعدم توفر البطاقات الائتمانية لدى أعداد كبيرة من المواطنين.
					[50] وجود مبرمجين أكفاء وكوادر مؤهلة في المؤسسات الحكومية لتصميم وإدارة الخدمات الإلكترونية المتكاملة.
					[51] ارتفاع كلفة توفير البنية التحتية اللازمة.
					[52] ارتفاع كلفة تصميم وتطوير وبرمجة الخدمات المتكاملة.
					[53] ارتفاع كلفة الدعم الفني والصيانة الدورية للبنية التحتية.
					[54] ارتفاع كلفة تدريب وتأهيل الموظفين الحكوميين المعنيين.
					[55] ارتفاع كلفة تسويق الخدمات المتكاملة ونشر الوعي بها لدى المواطنين.
					[56] ارتفاع كلفة امتلاك الحواسيب والهواتف الذكية بالنسبة للمواطنين.
					[57] ارتفاع كلفة الاشتراك في خدمات الإنترنت بالنسبة للمواطنين.
					[58] تدني مستوى دخل المواطنين يقلل من درجة تبنيهم للخدمات الإلكترونية المتكاملة.