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Computer Science Faculty
Information System Department

**E-Government Services in Afghanistan: Challenges and
Recommendations for Future Development**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ وَالصَّلَاةُ وَالسَّلَامُ عَلَى أَشْرَفِ الْأَنْبِيَاءِ وَالْمُرْسَلِينَ سَيِّدِنَا مُحَمَّدٍ وَعَلَى آلِهِ وَصَحْبِهِ أَجْمَعِينَ.

Declaration

I, **Mohammad Qias Mohammadi**, hereby declare that this thesis, entitled E-Government Services in Afghanistan: Challenges and Recommendation for future development, is my own original work and has not been submitted for any other degree or examination at any other institution. All sources used in this thesis have been duly acknowledged in the bibliography.

I affirm that the work presented in this thesis was carried out by me under the supervision of Assoc. **Prof. M. Shuaib Zarinkhail** and that any assistance received in the preparation of this thesis has been acknowledged.

I also declare that the research conducted in this thesis has been performed in accordance with the ethical standards set by my academic institution and that any potential conflicts of interest have been disclosed.

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Signature: _____

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Acronyms

Abbreviation

Full form

AFMIS	Afghanistan Financial Management Information System
ASYCUDA	Automated Customs Data System
CCTV	Closed Circuit Television
e-Gov	Electronic Government
e-Assessment	Electronic Assessment
e-ID	Electronic Identity
e-Passport	Electronic Passport
e-Payment	Electronic Payment
e-Service	Electronic Service
e-Tax	Electronic Tax
G2B	Government to Business
G2C	Government to Citizen
ICT	Information and Communication Technology
IT	Information Technology
MMS	Multimedia Message Service
MoCIT	Ministry of Communication and Information Technology
PDA	Personal Digital Assistant
RFID	Radio Frequency Identification
SBPS	State Budget Planning System
SMART	Specific Measurable Achievable Relevant Time-bound
SMS	Short Message Service
UNESCO	United Nations Educational, Scientific and Cultural Organization

Abstract

E-Governance, often known as electronic governance, is the use of information and communication technologies (ICTs) to provide citizens and enterprises with easier access to government services and information. E-service is the main part of e-government which has discussed in this research. The purpose of this research is to detect the challenges on e-government services in Afghanistan and provide the recommendations for its future development.

The successful implementation of e-government services is beset by many challenges such as digital literacy, social, political, financial and technological considerations. Providing training centers, reducing cost of e-services, reducing the tax on electronic devices, providing scalability during e-services development, and making a strategic plan for the development of e-services are the recommendations for its future development. All of these need to be given due care and attention for e-government services to be successfully developed and implemented in Afghan organizations.

We have used the Literature review and Survey as research methodology. We have created an online google survey with a list of questionnaires related to research topic to take the idea of e-Government services professionals, IT experts, university lecturers and students about the challenges on e-governments services in Afghanistan and providing a list of recommendations for its future development. We have analyzed the data collected by 120 respondents and found the 15 challenges levels and about 12 challenges that found in descriptive questions of survey and also, we proposed a theoretical framework of 22 recommendations for future development of e-government services in Afghanistan.

Keywords: E-Service, E-Government, Afghanistan, Information Technology, Challenges, Recommendations.

Chapter 1

Statement And Analysis of The Problem

1.1 Introduction

E-Governance or electronic Governance refers to the use of Information and Communication Technologies (ICTs) to give citizens and organizations more easy access to government services and information. As we know, e-Government services are common nowadays all over the world.

There are different approaches and perspectives in defining e-government which can be divided into technological, managerial, and political.

The idea of e-Government can reduce time and resource usage by fostering communication between the general public and governmental organizations. The terms "digital government," "e-Government," and "e-Governance" in the public sector refer to the use of Information and Communication Technology (ICT) as a time-saving mechanism for the collection and distribution of public information and the provision of public services. These phrases are frequently used interchangeably and are similarly related.

As we know, E-Government services are common nowadays all over the world.

1.2 Problem Description

Making an Electronic government is not an easy strategy to achieve short term, but it is a long-term roadmap to make it available for citizens. Although it has a plain meaning, electronic government has posed many problems for governments. Government should provide the required technical foundations for connecting their different entities and institutions. Another problem is the culture and mentality of people might be not ready to use electronic government services like E-Passport, E-Business services, E-Visa, and E-NID in Afghanistan. Changing a traditional and old

mentality or culture comes at considerable costs. Other problems to talk about are providing for a proper environment, & the lack of required skills for employers, and rendering quick changes in information technology, As we know in the current situation of our country there are many problems that prevents the implementation and execution of e-services in Afghanistan. These problems don't allow to use the e-services in an appropriate and safe way, there are many problems that delay the process of implementation and using the e-services in Afghanistan. People of Afghanistan don't use and getting advantages from e-services in correct way. Due to some problems in Afghanistan, people cannot use electronic services properly. The main and basic challenges that electronic services are facing include: IT infrastructure (electricity, internet, centralized database, technical machines) Security and Privacy problems, social problems and financial problems.

1.3 Research Objectives

A main part of thesis is to identify the objectives of a research, the main objectives of e-government services in Afghanistan according to this thesis are following.

Research Objective 1

- To identify the challenges that affect the adoption of e-government services in Afghanistan.

Research Objective 2

- To identify a list of recommendations for the future development of e-government services in Afghanistan.

1.4 Research Questions

- What are the main challenges to of e-Government services in Afghanistan?
- Which recommendations can be useful for electronic services in Afghanistan?

1.4 Thesis Outline

Chapter 1 - Introduction: This chapter provides an overview of the topic area addressed by the research. It describes the research objectives and questions while emphasizing the study's purpose and significance.

Chapter 2 - Literature Review: Based on current literature, this chapter discusses the key challenges of e-government services. It also explains the recommendation for future development of e-government service in Afghanistan.

Chapter 3 - Research Methodology: This chapter discusses several research methodologies, data analysis methods, and factors that may affect the validity of the findings. In addition, the chapter describes the exact research methodology used in this study and explains the research design.

Chapter 4 - Results and Analysis: The study's results and findings are presented in this chapter. It starts with an introduction that establishes the context and significance of the analysis. The results of the end user questionnaire are also included in this chapter.

Chapter 5 – Conclusion and Feature Work: This chapter presents the conclusions that have been derived from the conducted research and also provide a list of recommendations for the development of e-government services in Afghanistan.

1.5 Summary

This chapter includes the introduction of research e-government services in Afghanistan which shortly explain the challenges on e-services, the chapter discuss the main challenges on e-services IT infrastructure, financial problems, Social and security problems, the chapter also discuss the problems statements of research, research questions and outline of thesis.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The objective of this chapter is to outline the definition of e-government services, main challenges on e-government services and also providing the recommendations for future development of Afghanistan.

2.2 E-Government - Definition

E-Governance or electronic Governance refers to the use of Information and Communication Technologies (ICTs) to give citizens and organizations more easy access to government services and information (Yaqubi, 2021).

There are many conceptual and normative definitions of e-government. Just as the general concept of government carries different definitions through different perspectives, the same can be said about e-government. There are different approaches and perspectives in defining e-government which can be divided into technological, managerial, and political.

The idea of e-Government can reduce time and resource usage by fostering communication between the general public and governmental organizations. The terms "digital government," "e-Government," and "e-Governance" in the public sector refer to the use of Information and Communication Technology (ICT) as a time-saving mechanism for the collection and distribution of public information and the provision of public services. These phrases are frequently used interchangeably and are similarly related (Samsor, 2020).

E-government has no universal definition. The definition of "e government" is contested by a number of academics and researchers. For this reason, they have characterized e-government in a variety of ways some of them regard it as an end in itself, while others see it as a means to an end (Hakizimana, 2019).

E-government (short for electronic government) is the use of technological communications devices, such as computers and the Internet, to provide public services to citizens and other persons in a country or region.

E-government offers new opportunities for more direct and convenient citizen access to government and for government provision of services directly to citizens (Devinjck, 2023).

E-government does not simply use the internet. It also uses other digital communications channels such as television, radio, CCTV cameras, CCTV tracking, RFID, MMS, SMS, and Bluetooth (Devinjck, 2023).

The concept of E-Government emerged in the late 1990s despite that the history of computing as a tool in government establishments could be traced back to the origin of computer itself and just like other e-platform concepts such as e-commerce, the term e-government was born out of internet world. (Kazeem Oluwakemi Oseni , Kate Dingley ,Penny Hart, 2015) Few decades ago, e-Government as a term and as an identified activity was unknown before now and because of rapid growth, there is a possible future direction for the research domain (Kazeem Oluwakemi Oseni , Kate Dingley ,Penny Hart, 2015).

E-governance has become an accepted method regarding the use of information technology to improve transparency, provide timely information to all citizens, improve management efficiency, and improve governance. public services such as transport, electricity, health care, water, security, and urban services (Maryam, 2008).

Governance has always depended on technology, in the broadest sense, knowledge, skills, techniques, and epistemological strategies, as well as devices, hardware, software, and circuits. As the sphere of governance has expanded to new areas of the globe as well as new aspects of personal

relationships to date, it has relied on more complex sets of stored knowledge. Technically stored and disseminated (Maryam, 2008).

E-governance is the use of information and communication technologies by the public sector to improve the delivery of information and services, encouraging citizen participation in decision-making, and making government more accountable, transparent, and effective government. E-governance involves new leadership styles, new ways of debating and deciding on policies and investments, new approaches to education, new ways of listening to citizens, and new ways of organizing and providing new information and services (Maryam, 2008).

E-governance is often considered a broader concept than e-government because it can bring about a change in the way citizens interact with the government and with each other. E-governance can introduce new concepts of citizenship, both in terms of citizen needs and responsibilities. Its goal is to attract, empower and empower citizens (UNESCO).

E-governance is concerned with the encoding, processing, storage, and distribution of digitized data related to three main aspects of corporate governance, representation and regulation of social actors the provision of public services and the production and dissemination of official information (Qaisar , Ghufra, 2010).

E-governance is not just a government website on the Internet. The strategic goal of e-governance is to support and simplify governance for all parties; government, people, and businesses. The use of ICT can link the three parts and support processes and activities. In other words, in e-government, electronic media supports and promotes good governance (Maryam, 2008).

2.3 Stages of E-Government

The implementation of e-government has several stages. This section reviews the stages of the implementation of e-government as obtained from the existing literature. It includes research done by Gartner Research (2000), United Nations (2001), Layne and Lee (2001) and World Bank (2002).

UN/ ASPA Study – Five Stages of Government Model

Stage 1: Emerging: An official government online presence is established through a few independent official sites. Information is limited, basic and static.

Stage 2: Enhanced: Government sites increase; information becomes more dynamic. Content and information is updated with greater regularity.

Stage 3: Interactive: Users can download forms, e-mail officials, interact through the web and make appointments and requests.

Stage 4: Transactional: Users can actually pay for services or conduct financial transactions online.

Stage 5: Seamless: Full integration of eservices across administrative boundaries. Total integration of e-functions and services across administrative and departmental boundaries.

Gartner Study - Four Stages of E-government Mode

Stage 1: Presence: This stage is classified by a simple information-providing web site of a passive nature, sometimes described as “brochure ware,” indicating the same level of functions as a paper brochure.

Stage 2: Interaction: The interaction stage offers simple interactions between governments and citizen (G2C), government to business (G2B), or government agency to government agency (G2G).

Interaction stage web sites provide e-mail contact and interactive forms that generate informational responses.

Stage 3: Transaction: The transaction stage enables transactions such as paying for license renewals online, paying taxes or fees, or submitting bids for procurement contracts.

Stage 4: Transformation: The highest stage, most closely aligned with the concept of governance, involves a reinvention of how government functions are conceived and organized.

Layne & Lee Study – Four Stage E-government

Stage 1: Cataloguing: In stage one of cataloguing, initial efforts of state governments are focused on establishing an on-line presence for the government.

Stage 2: Transaction: In the transaction stage, e-Government initiatives will focus on connecting the internal government system to on-line interfaces and allowing citizens to transact with government electronically.

Stage 3: Vertical integration: Vertical integration refers to local, state and federal governments connected for different functions or services of government.

Stage 4: Horizontal integration: Horizontal integration is defined as integration across different functions and services. In defining the stages of e-government development, the vertical integration across different levels within similar functionality is posited to precede the horizontal integration across different functions.

World Bank study - Three Phases of E-government Mode

These phases are not dependent on each other, nor need one phase be completed before another can begin, but conceptually they offer three ways to think about the goals of e-government.

Publish: Publish sites seek to disseminate information about government and information compiled by government to as wide an audience as possible. In doing so, publish sites serve as the leading edge of e-government.

Interact: Interactive e-government involves two-way communications, starting with basic functions like email contact information for government officials or feedback forms that allow users to submit comments on legislative or policy proposals.

Transact: Allowing citizens to obtain government services or transact business with the government online. A transact website offers a direct link to government services, available at any time. Transact sites can enhance productivity in both the public and private sector by making processes that require government assistance or approval simpler, faster, and cheaper.

Non-internet e-government

While e-government is often thought of as online government or Internet-based government, many non-Internet "electronic government" technologies can be used in this context. Some non-Internet forms include telephone, fax, PDA, SMS text messaging, MMS, wireless networks and services, Bluetooth, CCTV, tracking systems, RFID, biometric identification, road traffic management and regulatory enforcement, identity cards, smart cards and other near field communication applications; polling station technology (where non-online e-voting is being considered), TV and radio-based delivery of government services e.g. email, online community facilities, newsgroups and electronic mailing lists, online chat, and instant messaging technologies (Devinjck, 2023)

Conceptual framework for E-governance

The emergence of information and communication technology (ICT) has provided means for faster and better communication, efficient data storage, retrieval and processing, and

information exchange and use. for its users. E-governance is the next logical step in using ICT in governance systems to ensure broader and deeper citizen participation (Tamara , AbuAli, 2010).

Defining E-Governance

E-governance is the application of information and communication technologies to government processes to provide simple, ethical, accountable, responsive, and transparent (SMART) governance. (Mobahi, 2011) E-governance is defined as the use of new information and communication technologies to facilitate government and public administrative processes while e-government is defined as the use of information technology to support government operations, engage citizens, and provide government services (Mobahi, 2011).

2.4 E-Governance Objectives

According to (Maryam, 2008) the objective of e-governance includes the following:

- To ensure transparency in the workings of government
- To ensure greater efficiency, objectivity, accountability, and speed in providing services and information to the public
- To provide qualitative and cost-effective services
- To provide a single window for all government services
- To evolve responsive administration
- To provide a friendly, speedier, and efficient interface
- To eliminate the middlemen

Domains of e-governance

E-governance supported by the innovative use of ICTs can transform relationships with citizens, businesses, and different branches of government. (Maryam, 2008) identified three main areas of e-governance:

- E-administration: improve government processes

- Electronic services: connect citizens with their government
- Electronic company: build interactions with and in civil society.

1. E-Government - the main goal of e-government is to improve the internal operations of the public sector by reducing process costs, managing process performance, creating strategic linkages within government, and creating empowerment. Reducing the passport application time from two weeks to one day is an example of e-government (Azizur Rahman Alvy Riasat Malik, 2020).

2. Electronic services – an initiative focused primarily on improving the relationship between government and citizens by increasing the flow of information between them – especially regarding two-way communication – and improving improve the level of government service to citizens. Public service institutes provide citizens with the opportunity to apply online service examples.

3. The e-society - initiative for business licensing through government websites is an area of expansion of e-services by focusing on institutional stakeholders, such as private sector service providers, other government agencies, and community and nonprofit organizations. The e-society focuses on building sustainable partnerships and social/economic communities: for example, through the creation of a business community portal (Siauliai, 2017).

2.4 Service and E-Service

Any service that is delivered over an electronic channel is referred to as a "e-Service", Mobile and Internet-based services are the examples.

“Traditionally providing a service means making personal and face-to-face activity”. With such a move, it is evident that service users are impacted by the service provider and the caliber of their own psychological and personal experiences. (Oseni, Kazeem Oluwakemi , Dr. Kate Dingley, Dr. Penny Hart, 2015).

Traditionally, rendering a service entail engaging in personal, face-to-face interaction. By taking such a step, the service provider's personal and psychological experiences are clearly having an impact on the customers who are using the service (Mobahi, 2011).

concept of service should be focused on human aspects and especially their needs. While one of the main efforts of e-government is reducing face-to-face interactions, effectiveness and efficiency of service systems become important and in this regard the role of services employees and culture of organizations is at the same level of importunacy (Nesterenko, 2014).

Having a suitable service concept gives a highlighted direction to service providers and helps them to have clear understanding of all elements of the service which enables them to design a good web based service (Devinjck, 2023).

Electronic services or e-services are services which make use of information and communication technologies (ICTs). (Devinjck, 2023) The three main components of e-services are:

- 1-Service provider;
- 2-Service receiver
- 3-Channels of service delivery

The more acceptable definition of service is an integrated combination of process people skills and materials so there is a combination between some items such as staff members, customers, physical and technical resources, and organizational structure (Orebro, 2019).

(Mobahi, 2011) defined the main characteristics of services as follows: intangibility, heterogeneity, producing and consuming simultaneously, and most of the time the fact that the customers and service providers to interact with each other in a common environment. While service is personal, face-to-face, and dependent on time and place, e-services are independent of time and place

Some other researchers like (Mobahi, 2011) classified e-services to hard and soft e-service.

According to their classification, hard e-services consist in just getting the services to the customers

while soft e-services consist in Web site design, data information readiness, and transactions. The factors which are important in soft and hard e-services are different. When speaking about hard e-services, on-time delivery and response time become important whereas for soft e-services, web content, security, accessibility and reliability attract much more attention.

Types of E-Service

In most developed and developing countries there are numerous E-Services available now at all levels in both corporate and public institutions. According to (Khadaroo, 2013) the following are various types of E-Services:

- E-payment
- E-assessment
- E-complaint
- E-licensing
- E-compound
- E-rental
- E-forum
- E-Learning
- E-tax

Some examples of online transactional services, (Devinjck, 2023) employed in e-governments include:

Applying for a birth and death certificate

Applying for a business license

Applying for a driver's license

Applying for government vacancies online

Applying for a marriage certificate

Applying for a personal identity card

Applying for social protection programs

Applying for a visa

Applying for electronic Passport

E-Service Cost Factor

There are some of major cost factors of E-Service which are the following (Monjur, 2010).

1. Expense of setting up applications
2. Maintaining applications
3. Internet connection
4. Hardware/software
5. Security concerns
6. legal issues
7. Training
8. Rapid technology changes

Domains of E-Government Services

Less expensive and more efficient information management and processing the freer flow of information between ministries, agencies, and levels of government. more professional administrators, supported by standardized and electronically integrated decision-making systems the regular provision of services according to objective rules, as opposed to the client's arrangement; transparency, especially in the procurement of government services opportunities to work with the private sector to modernize government processes; the freer flow of information between government and citizens strengthening intermediate democratic institutions, such as parliament, local government, civil society organizations (CSOs) and independent media; opportunities for people to participate more directly in policymaking; opportunity to combine traditional and modern accountability methods (Haider, Shuwen, Burdey, 2016).

The term ‘e-service’ has many applications and can be found in many disciplines. The two dominant application areas of e-services are (Devinjck, 2023).

1-E-business (or e-commerce): e-services mostly provided by businesses or non-government organizations (NGOs) (private sector).

2- E-government: e-services provided by government to citizens or business (public sector is the supply side).

Types of Service Delivery in E-governance

The quest to improve service delivery through the use of ICT in government generally focuses on four key aspects That are: (Heeks, 2016)

1. G2C (Government-Citizens)

This is mainly focused on developing user-friendly one-stop service centers for easy access to high-quality government services and information. An interface is created between the government and citizens that allows citizens to benefit from the efficient delivery of public services. This expands the availability and accessibility of public services and improves service quality. The main goal is to make the government, respect the citizens

2. G2B (Government to Business)

This aims to facilitate and build capacity for business transactions between the government and the private sector by improving communication and connectivity between them. The aim is to reduce bureaucracy, save time, reduce operating costs, and create a more transparent business environment in dealing with the government.

3. G2G (Government to Government)

It is an intergovernmental effort to improve the communication and efficiency of services between federal, state, and local governments in day-to-day administration. It generally aims to improve the efficiency and effectiveness of all government activities.

Information and communication technologies are used not only to restructure government processes involved in the operations of government agencies but also to increase the flow of information and services between different entities. The main goal is to increase efficiency, performance, and production (Abidin, 2006).

2.5 E- Government Services in Afghanistan

E-government is a new concept in Afghanistan in fact it began with the formation of a new government in 2001 through the direct intervention of the international community (Sargand, 2019). This has encouraged the government to use information and communication technology to improve efficiency and increase its ability to provide quality services to its citizens for effective management. Over 100 public sector websites have been updated by the Ministry of Communications and Information Technology (MoCIT). Helping them to provide accessible, consistent and reliable information, leading to transparency. The e-government part is the main part of the initiatives (MoCIT) which is highly appreciated as it has brought new systems to government agencies and departments. This has led to the creation of a unique feature that allows all government agencies to access more than 100 government-related websites that have been designed and hosted by the Ministry of Industry and Trade.

The e-government administration works under the control or vision of the media and the Ministry of information technology, developing society into an IT society and providing opportunities for technology professionals to be equipped with information and skills. Advanced

capabilities play a specific role in providing advice and guidance on the development and implementation of e-government in government agencies and departments (Waseeb, 2019).

Afghanistan's e-government department, which is part of the MoCIT, is crucial in its efforts to provide citizens with online services that are hassle-free and transparent.

In order to improve service delivery and increase citizen happiness, organizations must save time, effort, and costs while increasing transparency and accountability. By better understanding user needs, it will enable government agencies process government data more efficiently with the goal of providing seamless online services. The internet services allow various departments and agencies of the government to share information and ideas in order to create a single, massive data base. This increases accuracy, transparency, and the flow of information between the government and its constituents, It aids in preventing corruption as well. (Sargand, 2019) Essentially, e-governance helps build trust between government and citizens, an essential element of good governance by using internet-based strategies to engage citizens in the political process. Of governance, exemplifying government transparency and accountability. The main obstacle facing the Afghan government is the fight against electronic ignorance and literacy among the people. Financial aid is also a major obstacle for any project in the developing world. (Sargand, 2019).

Role of ICT in the Government Administration Systems of Afghanistan

The last few years, particularly the last two, have seen a significant increase in the use of electronic technology in government offices.

Senior government officials place special emphasis on, and although progress is being made slowly, efforts are being made to achieve it. Making an electronic revenue collection system and using a mobile system to pay employee salaries in the Kabul municipality. (Yaqubi, 2021).

creating identity registration systems in several ministries that have large organizations, using digital presence systems in a large number of Government institutions, Establishment of human resource information management system Establishment of financial regulation information system, establishment and use of the automated system for customs, the establishment of government budgeting plan system, the establishment of development assistance base, Establishment of a national information system. Electronic tax payment systems, tax collection Systems, etc. are examples of the implementation of information technology, communication, and digitalization of Afghanistan's administrative systems at present. (Yaqubi, 2021).

Role of the Ministry of Finance

It is difficult to give an overview of the systems of the Ministry of Finance, but it plays a very important role in e-governance. (Sargand, 2019)The Ministry of Finance is now the first to have a website that includes all relevant departments online. Many e-government projects have been continuously implemented and are being implemented with the support of UNDP and many other international organizations in collaboration with the Ministry of Finance. Major IT/e-Government projects introduced by the Ministry of Finance include:

Afghanistan Financial Management Information System (AFMIS), Automated System for Customs Data (ASYCUDA), State Budget Planning System (SBPS), and Database Development Assistance (DAD), the benefits of which are explained in detail below.

Afghanistan Financial Management Information System (AFMIS)

The AFMIS system was installed by the Afghan government to improve the country's public financial system in 2002. The implementation of the national budget is done through this system. AFMIS is based on the Free Balance application system and has a cost of \$3.9 million funded by the World Bank. AFMIS was gradually introduced in the country in 2002, it was installed at the

Ministry of Finance in Kabul, it later expanded to all 34 provinces. The main system of AFMIS is located at the Treasury Department of the Ministry of Finance in Kabul and it is linked to the provincial departments of all ministries (Sargand, 2019).

AFMIS gives government's access to reliable financial information and helps them keep tight control over their spending; it also improves government financial services and links government institutions together, helping to improve decision-making mechanisms and providing accountability and transparency in financial operations.

Automatic System for Custom Data (ASYCUDA)

Automated Customs Data System (ASYCUDA) is a computerized system that is a database for customs tax administration. (Sargand, 2019) The system was installed in Afghanistan with financial support from the World Bank. The first phase of the project was launched in 2004, while the remaining phase was completed in June 2015; Currently, about 90 percent of international trade is covered by this system. (ASYCUDA) plays a very important role in the recording of tax transactions on imports, leading to transparency in the financial records of Afghanistan. This system has enabled customs to improve accountability and transparency in customs and has accelerated the clearance process for traders. After implementing this custom system, revenue collection increased rapidly, automatically leading to a reduction in corruption and improved tariff management. This system is currently operating on major trade and transit routes such as:

Torkham (border with Pakistan), Islam Qala (border with Iran), Hairatan (border with Uzbekistan), Towraghondi (border with Turkmenistan), Sher Khan Bandar (border with Tajikistan), and Zaranj/Nimroz (border with Tajikistan) Iran). Furthermore, the system is also operating at the country's main airports.

However, corruption in customs is still very high, and poor recording of import and export transactions changes the real costs of customs. Furthermore, tribal leaders avoid using this system because they fear that the system will bring in illegal proceeds from customs.

State Budget Planning System (SBPS)

State Budget Planning System (SBPS) features a user-friendly, web-based graphical interface that combines MS Excel-like spreadsheet best practices with online electronic data entry forms. It also explains budget usage and implements the budgeting process. The purpose of this program is to explain how the public budgeting system is built and operated and to provide important guidelines for working with the application. For everyone who deals with this application, the use of this application is mandatory. (Sargand, 2019).

Development Assistance Database (DAD)

This is an aid management system created with financial support from UNDP in June 2002. The database is chaired by the Budget Department of the Ministry of Finance. This system tracks donor funding projections and provides a useful database for efficient and transparent aid management. This system allows monitoring duplication of projects and proper use of resources. With the installation of this system, coordination between the government and donors has improved regarding aid allocation and management. The system stores financial backing data and various types of reports about it can be generated through it. These reports are easily shared with donors, governments, and the public.

Ministry of Interior: Electronic Passport

A biometric passport, also known as an electronic passport or a digital passport, is a traditional passport with an electronic microprocessor chip that contains biometric information that can be used to identify the recipient. Passport. It's contactless technology, the small tip and antenna are the front, back, or center page of the passport. Important data is printed on the page as well as

inside the chip. To prevent tampering, public key infrastructure is used to identify data if the system is used properly. Many countries are moving towards the use of biometric passports. Since 2008, 60 countries have issued such passports, this number has increased to 120 until June 2017.

Thanks to this system to obtain a passport, only the original certificate of citizenship and the color of the copy is required. The Passport Office will send the applicant's certificate of citizenship to the Head of the State Population Registry, who will testify and respond to the concern. Government and militia officials also benefit as they do not need to be certified by the Bureau of Vital Statistics every time, they have to officially cross the border. Thanks to the e-passport, they can directly present identity cards and official travel documents from their respective departments to other border security agencies.

Biometric Authentication of Passports

The new standardized biometrics used for this type of ID system are Body ID, Fingerprint ID, and Rainbow ID (Sargand, 2019). These systems were developed after evaluating different types of biometrics, including retinal scans. To store biometric data on a contactless chip it includes an EEPROM (Electrically Erasable Programmable Read-Only Memory) storage memory of at least 32 kilobytes and operates on a standards-compliant interface. International standard ISO/IEC 14443, among other interfaces.

These standards provide cooperation between different systems in different countries and different passport book manufacturers (Sargand, 2019). Passport applicants follow the biometrics process of the respective post office. In the event of a passport being lost, an Afghan knitted leaflet will be provided to its central office or administrative units in the provinces. Once the passport is credited, all newly issued passports will be issued at full price, which benefits the government and citizens. With this system, the government can avoid fake passports and reduce crime. For everyone, it is

also important because no one can use their passport. After all, the biological system includes all the information about the passport holder.

National ID Card

After the World Trade Center tragedy of September 11, 2001, or so, all countries are rethinking their identification systems to separate terrorists from ordinary people (Yaqubi, 2021). The UK government has been considering moving towards a national identity card that would use one or more biometric techniques such as iris or fingerprint recognition to confirm the identity of the cardholder. The controversial plan would include developing a national database of basic personal information.

An identity card is a document that identifies or shows the information of the person carrying it and recognizes where that person comes from. So, thanks to this card we can do business all over the world. Identity is a legal, political, and meaningful relationship between the state and the people. If a person has no identity, he cannot participate in elections and cannot work in government.

Afghan National Electronic Identity

The Afghan Electronic Identity Card (e-Tazkira) is a national identification document issued to all citizens of Afghanistan. It is proof of identity, residence, and citizenship. The program was officially launched in Kabul on May 3, 2018, when President Mohammad Ashraf Ghani and First Lady Rula Ghani received their e-tazkira. The distribution of electronic identity cards or e-Tazkira has also begun to all Afghans. Afghanistan's new identity card is based on international standards for identification. (Yaqubi, 2021).

119 Police Directorate: 119 Information Center

For the first time, a 119-information system was established in the city of Kabul by the Ministry of the Interior. Financially, NATO supports it, 58 men and women have jobs. The tool

works all week and 24 hours a day for personal safety. The center's objective is to provide citizens with the opportunity to provide information on terrorist activities, corruption, human rights violations, criminal activities, and police misconduct. The center was expanded to many other provinces such as Kandahar, Nangarhar, Helmand Herat, and Balkh in 2013.

When it was established, many people called this center and expanded day by day. The government has prevented many terrorist attacks and arrested many of them. For example, in 2014, with the help of this center, 173 landmines were cleared, 15 suicide vests were discovered, and 20 suicide bombers were arrested.

Afghanistan's Status in the United Nations' Electronic Government Survey

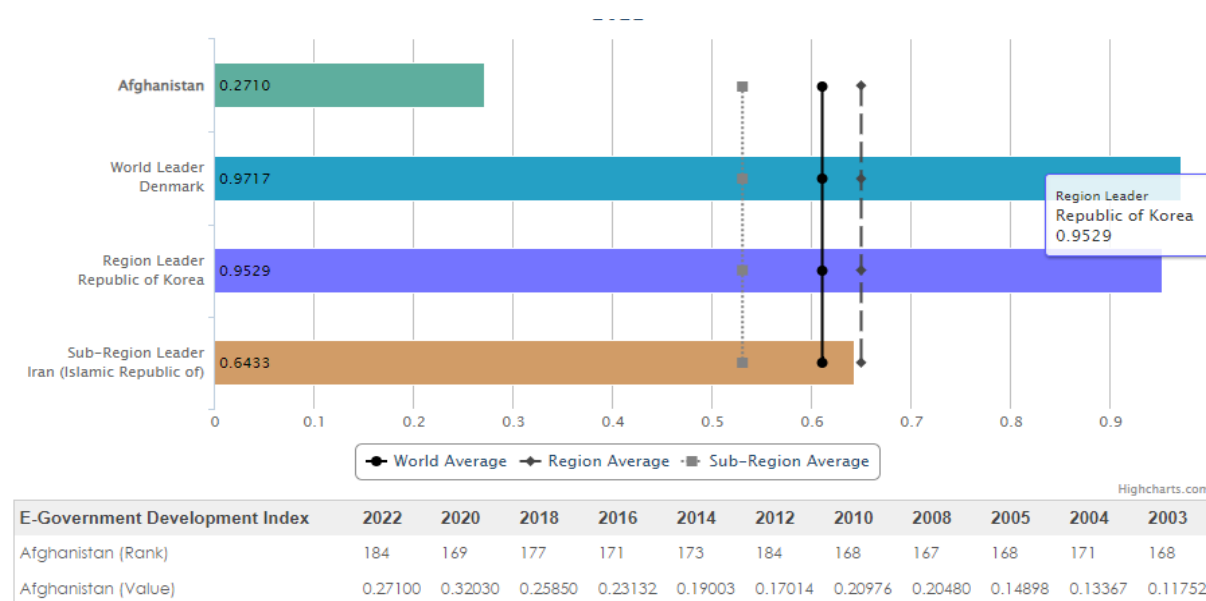
Organizations like the United Nations Department of Economic and Social Affairs ("UNDESA") the United Nations Public Administration Network ("UNPAN"), and WASEDA University often carry out online e-Government surveys. Japan's WASEDA University often chooses nations based on predetermined criteria. Every two years, 193 nations are typically covered by an online survey conducted by the United Nations Department of Economic and Social Affairs (UNDESA) and UN Public Administration Network (UNPAN).

Three perspectives—the scope and quality of online services, telecommunication connectivity, and human capacity—are taken into account by the survey methodology. The study team consults the websites of the national governments of each nation, as well as those of the ministries of education, labor, social services, health, and finance. When assigning values to survey responses, associated portals and subsidiary websites are taken into account as integral parts of the parent sites. The time frame for evaluating a certain nation is determined by its internet services, particularly the quantity and functionality of its websites. Typically, a researcher examines one or two nations daily. After

initial review, the senior researcher views it, and if there are any questions, the team leader will provide his or her approval. (United Nation, 2012, 2014, 2016).

Figure 1's analysis of the results of the e-Government survey reveals that in 2010, Afghanistan's e-Government development index was 168 and its e-participation rate was 127 in 2012 the e-Government development index was 184 and the e-participation rate was 89. In 2014, the e-Participation index was 152 and the e-Government index was 173. In 2016, the e-participation index was 104 and the e-government index was 171. In 2018, the e-participation index was 145 and the e-government index was 177. In the 2020 the e-participation index was 118 and the e-government index was 169. in 2022 the e-participation index was 163 And the e-government index was 184 As a result, we can draw the conclusion that the e-Government development index performed better in 2010 and 2022 compared to survey results from previous years, while the e-Participation index

Figure 2.1 Afghanistan status in UN e-Government survey (2010, 2012, 2014, 2016, 2018, 2020, 2022)



performed equally in the 2012 and 2020 surveys. This is encouraging for the development of technology and democracy.

2.6 Benefits of e-Government Services

According to (M. Alshehri, S. Drew, 2010) the benefits of E-Government are followed:

- reduction of customers' and organizations' time, effort and costs
- improvement of service delivery and citizens' satisfaction
- increase of users' ICT skills, internet knowledge and computer usage
- creation of new business and work opportunities
- improves efficiency of government agencies in processing of data
- improves services through better understanding of users' requirements, thus aiming for seamless online services. According to (ODINGA, 2010) the benefits of e-government are
- share information and ideas between all government agencies and department to build one mega data base.
- assists a government's economic policy objectives by promoting productivity gains inherent in ICT and e-commerce.
- improving transparency, accuracy and facilitating information transforming between government and customers.
- helps in building trust between governments and citizens

2.7 E-Government Services Challenges

There are several challenges and barriers that can delay progress of e-government implementation. The variety and complexity of e-government initiatives implies the existence of a wide range of challenges and barriers to its implementation and management. This section, will briefly introduce the most important and common challenges and barriers based on literature review.

Technical (ICT) Challenges

Since the whole system is IT based, there are some technical hurdles that e-government may face. One of these problems could be the lack of coherent and coordinated IT infrastructure among various government agencies and organizations. Since all data is on online systems, the privacy and security of their information and transactions also remain a top concern for people. People can only trust systems if the government provides transparent and independent procedures and methods (M. Alshehri, S. Drew, 2010).

For the successful implementation of e-Government initiatives, researchers concur that a proper IT infrastructure should come first. They note that this is one of the major issues in poor nations where people do not have sufficient access to the Internet, energy, or computers. (Samsor, 2020).

The (WorldBank, 2015) stated in a report titled "Afghanistan Shows the Way in E-Government: Explaining the Projects in Kabul and Many Other Provinces" that Kabul Over a hundred websites and simple access to trustworthy information in the public sector have been fixed by the ministry of communication and information technology in the last two years. The capacity building result (CBR) program, which was introduced in 2012, was also highlighted in the report, along with speeches from participants who have now attained prominent positions.

In a study titled Combating Corruption through E-Governance, Najimi, Bashirullah (2015) detailed all the steps taken by the ministries of communication and information technology, finance, and home. The researcher went a little too far by citing Afghanistan's Financial Management Information System (AFMIS) as an example. Development Assistance Database (DAD) and Automatic System for Customs Data (ASYCUDA). These initiatives are all carried out by the finance ministry. The researcher claimed that these programs also prevent corruption (Yaqubi, 2021).

The projects that are also sponsored by USAID for combatting corruption were noted in a study by USAID (2012) on mobile money and fighting corruption. One of these apps, called M-Pisa, allows for mobile money transfers. In 2008, this arrangement was agreed upon by Roshan Mobile and Vodacom (Yaqubi, 2021).

Organizational Challenges

There are also organizational challenges that can negatively affect the implementation of e-government systems. E-government is not just a technical matter it is rather an organizational problem. Stakeholders emphasized that e-government is more of a change management issue than an IT infrastructure implementation issue. The challenges that arise at the organizational level about e-governance can be Top management support, Resistance to change to electronic ways, Collaboration and Lack of qualified personnel and training (M. Alshehri, S. Drew, 2010).

Top Management Support: The implementation of e-government needs the support from the leaders and top management of government for successful implementation (M. Alshehri, S. Drew, 2010). Top management support refers to the promise from leaders to accept, support and adopt the e-government systems and applications. Therefore, it plays a significant role in the adoption and implementation of e-government. In fact, leadership is one of the main driving factors in every new

and innovative project or initiative, so it is necessary for the implementation of e-government. The support from high-level, is vital to e-government development, the gaining of required resources and training, the cooperation and coordination between partners and stakeholders for a successful of e-government implementation (Samsor, 2020).

Resistance to Change to Electronic Ways: E-government is a new phenomenon which in the work place means the transformation from manual methods of work to electronic ones. (Alrawahna, 2018) These new changes will create a new advanced environment completely different to what has been used for many years in government departments. mentioned that many employees see the e-government implementation as a threat to their positions and fear losing their jobs and power. However, to decrease the resistance to e-government systems employees have to understand the importance and significant of e-government and make sure that they won't endanger their jobs. Moreover, it is important that e-government leaders identify the sources of resistance and create a plan for treat them.

Collaboration: Collaboration and cooperation between all partners is a critical factor in the e-government implementation process in order to gain a successful e-government system, cooperation between public and private sectors is necessary to provide resources, plans, skills and experiences that the government may not otherwise have. (Samsor, 2020) Government should encourage all sectors to participate in e-government and implementation and development. In general, it is vital to focus on training and education programs for enhancement the progress of e-government projects. However, training is a fundamental prerequisite as the rate of change increases and new technologies, practices and competitive models appear.

Social Challenge

Social issues can be rooted in the cultural and ideological trends of the target group. The layout and design of the interface should be such that it can be used by many people. There can be countless social challenges along the way such as digital, cultural, educational, and financial, etc.

Social Barriers Social issues are mainly concerned with the usability by a large variety of people. This implies that the interface must be usable by all kinds of people within the government. Social obstacles include many factors such as digital divide, culture, education and income. In this area the first two factors will be illustrated (M. Alshehri, S. Drew, 2010).

Digital Divide: The digital divide refers to the gap in opportunity between those who have access to the Internet and those who do not. Those who do not have access to the Internet will be unable to benefit from e- government services. Thus, digital divide is the gap between those with access to computers and the internet. Therefore, not all people have the suitable access to computers and Internet, whether due to a lack of income or internet access (Mohammad , Sriram, 2015).

Culture: The main barriers to the implementation of e-government are not technical, but cultural implications of new technologies. Culture was defined as a set of important assumptions, beliefs and values that all members of a society share in common. culture is difficult to study partially because it is not an easy concept to define. Cultural differences and individual behavior patterns play a role in the acceptance and use of new technology. The factors of culture are: social structure, education, language, religion, economic philosophy and political philosophy. (M. Alshehri, S. Drew, 2010).

Financial Barriers

The lack of financial support is considered as significant obstacle to the implementation of e-government in many countries. It is necessary to ensure the availability of the existing and expected budgetary resources in order to achieve the goals. The most serious and significant barrier to the implementation of e-government is a lack of money; e-government implementation is expensive. Since every government budget is already overburdened with every possible expense budget makers can fit into it, the suggestion to expend the considerable sums that an excellent e-government will cost is a non-starter, in budgetary terms, and in budgetary politics stated that because of the high cost of implementation and maintenance the computer systems, many countries become in dilemma of funding e-government programs, even when a government entity has a plan for effective and accessible e-government. A major obstacle to e-government is the lack of finance for capital investment in new technology. The abilities of government offices to place services online and to use technology for democratic outreach are hampered by budget considerations. Finally, the total cost, including the high cost of systems hardware and maintenance, software's, training and education, are always seen as major barriers inhibiting agencies and governments from using the technologies (Napitupulu , Indra Sensuse, 2014).

According to (Samsor, 2020) the challenges of e-government services are:

Cost of telecommunications (2) Delivery of government e-service to remote areas (3) Lack of technical and human resources for e-Government coordination and implementation (4) Literacy and acceptance of e-Government in public sector and society (5) Privacy on information and freedom of information issues (6) Lack of electricity (7) Presence of traditional and bureaucratic procedures in organizations (8) Resistance to change

2.8 Recommendation to E-Services in Afghanistan

The design of e-government services should be close to the reality of the country situation.

The following recommendations should be follow for the implementation of e-government services.

Increasing the awareness of the concept of e government among the citizens. Trying

to use the TV, internet, Ads, School, and other ways to spread the importance of moving to the electronic system (Abdulbaqi, 2016).

Providing training centers for the limited income citizens to enhance the e-literacy. Also, involve the ICT in the education system (Abdulbaqi, 2016).

Putting a long term plan to implement the project and improving the IT skills for the staff that will work on the project. Initializing a national Database (Census Database) to the city that has all the required information for the citizens, and providing security and privacy for the information. Trying to find other advanced ways to implement the project that can be less expensive and consume less time with things such as using the cloud Computing (Abdulbaqi, 2016).

Citizens participation must be increased in order to achieve maximum utilization for their required e-services and to accomplish public expectation, transparent policies along with certain step by step viable goals should be maintained as per current circumstance, therefor government should start thinking more strategically about how can e-service play role in the enhancement of productivity and use of information in public sector at large extent (Haroon Shahzad Waqas Younas, 2007).

A single portal can produce better communication concurrencies among the deferent department and citizens. Awareness and utilization should be encouraged at all levels and flexibility

with respect to language culture and citizen ease should be also considered (Haroon Shahzad Waqas Younas, 2007).

The Ministry of Communication and IT should involve stakeholders from the beginning of any e-Government project, perhaps through formal or informal meetings and discussion, including the use of email, chat rooms (Skype and Yahoo, Google), video conferencing and social media (Facebook and Twitter). These ongoing public discussions will help improve e-Government awareness which is also a very critical factor in the development of e-Government (Samsor, 2020). Coordination is the second major obstacle found in the analysis. The Ministry of Communication and IT should be home to a strong and active coordination department which should identify and coordinate internal and external stakeholders for all e-Government projects and activities. Effective coordination will include the usage of mobile, email and formal and informal communication (Samsor, 2020).

In order to realize gender equality and to increase girls' school enrollment rate, especially in the area of science and technology, the government should work strongly toward tackling the society's prejudice toward girls and women. Creating public awareness on the girls and women roles and their contribution to build a society in particular and the country, in general, is vital. Reducing school fees or free education for girls and women in the field of science and technology can be one of the ways how the government can motive and encourage girls to attend school. Creating partnerships and collaboration with the private sector in a way that private companies can financially support or contribute to the implementation of e-government services (Hakizimana, 2019).

The experience and knowledge sharing program is one of the best ways to gain good knowledge and awareness about e-government projects. Allowing citizens to import ICT materials

such as computers and internet devices with reduced tax initiatives would help, since doing so can reduce the prevailing digital divide (Hakizimana, 2019).

Chapter 2 Summary

This chapter included a review of the literature from studies conducted in other nations that have experienced comparable circumstances to Afghanistan.

This section include the latest research papers which were studied during literature review , the main focus of literature review was to review the challenges on e-government services and propose the recommendations for its future development in Afghanistan.

Chapter 3

Research Methodology

3.1 Introduction

This chapter describes the research approach. It talks about the methods utilized to collect data from various categories of individuals. It also provides an outline of the many research methodologies accessible as well as their benefits and drawbacks. As this is a qualitative research and requires explanation of the answers given by the respondents. The targeted groups of people are the IT Experts, e-Government services experts, University lectures and students. IT experts are those that have knowledge about e-services from technical side and transform traditional systems to electronic. E-Government services expert are the people who have enough knowledge about e-services from all side of using implementation and maintenance.

3.2 Methodology

Literature review, conduct a comprehensive review of relevant literature on electronic services, its implementation and challenges faced by countries that have implemented it. This will help identify key issues, concepts and approaches related to research topic.

Research design, determine the research design which can be either quantitative, qualitative or mixed method based on the research questions, objectives and resources.

Qualitative research can be involved interviews, surveys or focus groups to gather from relevant stockholders such as e-Government services department, e-services professionals, experts and end users.

Quantitative research could include collecting and analyzing data from relevant sources such as government reports and databases, to provide statistical evidence. Mixed method research involves combining both quantitative and qualitative methods to provide a more comprehensive understanding of the research topic.

We have used focus group as main method for collection the primary data and we have reviewed the literature review as secondary data. Our main focus will be on the four group's people that are mentioned in introduction like e-Government Professionals and expert, IT expert and University Lectures.

Data Collection

Data collection process id done accordingly selected research design. This can involve conducting survey and analyzing data from relevant academic literature.

For challenges and providing recommendation for future development of e-government services in Afghanistan we will design a questionnaire in google form according to our research questions and we will use a survey method.

Literature review, conduct a comprehensive review of relevant literature on electronic services, its implementation and challenges faced by countries that have implemented it. This will help identify key issues, concepts and approaches related to research topic.

Overall, our data collection will be performing in the following ways. Primary and secondary that both of them will presented her.

Primary Data Collection

The primary data has been collected from e-Government Professionals and experts in e-Government department, IT experts, end users and University lectures. Surveys are a popular method for gathering primary data. We create a survey on google form for collecting primary data. For further information, the following table is illustrated.

Table 3.1: Data collection themes

Demographic Variable	Category	Sample	Percentage
Gender	Male	107	89.2%
	Female	13	10.8%
Age	Under 18 years' old	1	0.8%
	18-30 years' old	83	69.2%
	31-45years old	32	26.7%
	46 years or older	4	3.3%
Education Level	High school diploma	2	1.7%
	Bachelor's degree (e.g. BA, BCS, BSc)	74	61.7%
	Master's degree (e.g. MA, MSc)	39	32.5%
	Doctorate degree (e.g. PhD)	5	4.2%
Designation	E-Government Services professional at e-government Department	16	13.3%
	IT expert at E-Government Department or other local government organizations	25	20%
	ICT Worker at Private organizations	16	13.3%
	Student at University	9	7.5%
	Lecturer at University	32	26.7%
	Other	23	19.2%

Secondary Data:

Secondary data collection is the process of gathering information from existing sources rather than from primary sources. In the context of challenges and recommendation of e-Government Services for future development in Afghanistan, the secondary data may include the gathering of information from various of sources government reports, academic journals, master thesis, research papers, books and webpages.

3.3 Design of Research

This section provides an overview of the design of this research. The research is designed to collect the primary and secondary data related to research topic. Based on the primary data the questionnaires are prepared for quantitative and qualitative analysis through e-government services professionals, IT experts, University lecturers and students. The literature review conducted based on secondary data. The following figure depicts the exact process used in this study.

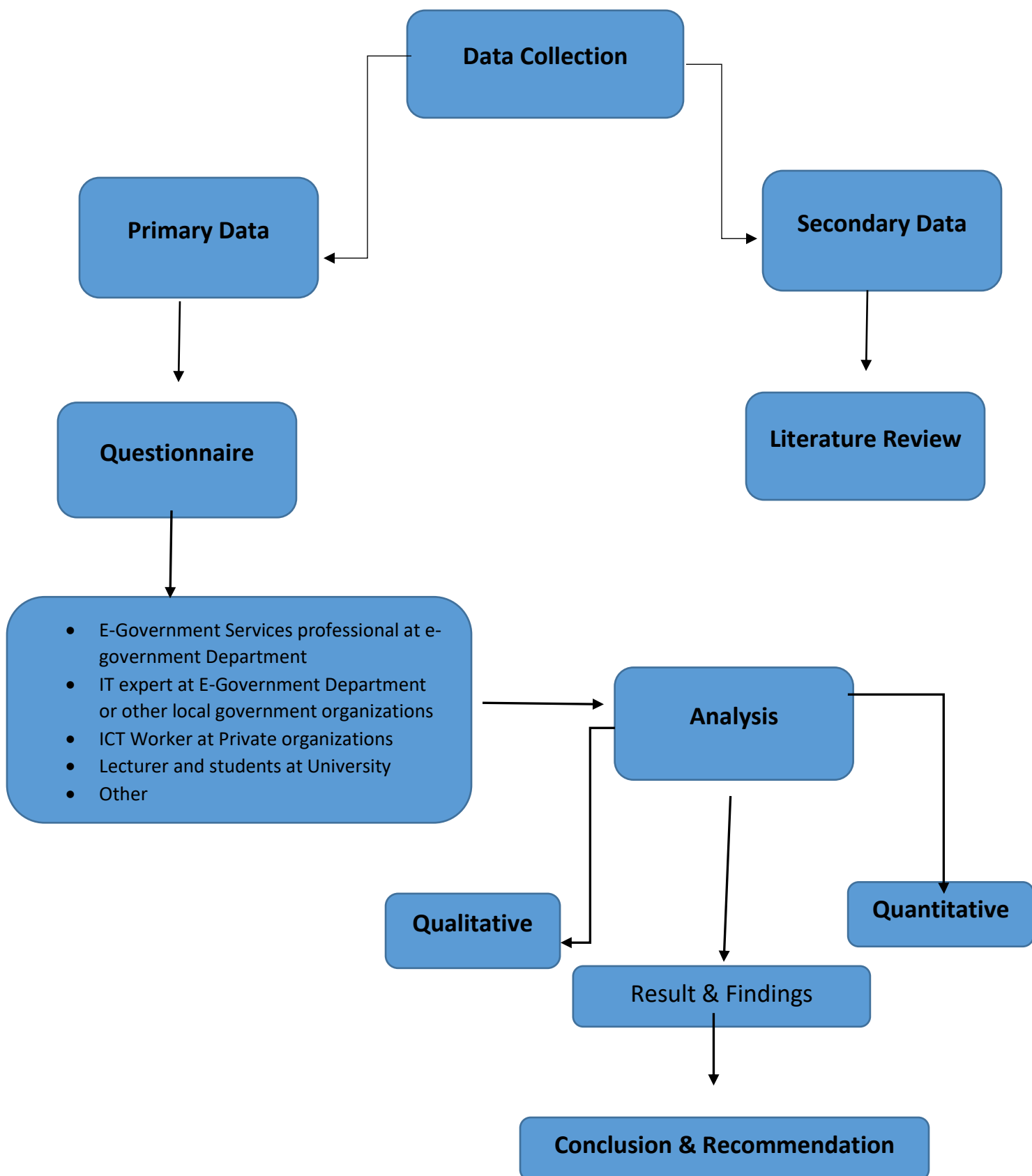


Figure 3.1 the design of research

The Challenges in Data Collection

E-government services challenges and recommendations for future development in Afghanistan faces more challenges in data collection process. These challenges include limited access to reliable data sources. Major obstacles in data management include data fragmentation, insufficient management systems, security and privacy concerns, technical infrastructure limitations (slow internet connection, no enough electricity) compatibility and interoperability issues, many people did not know enough about e-services.

3.4 Chapter 3 Summary

Chapter 3 were focused research methodology on e-Government services challenges and recommendations for future development.

The research is mixed (quantitative and qualitative) collects data from e-Government Services Professionals, IT experts, University lectures and students. We have created a questionnaire in google and done a survey to detect the challenges on e-government services and get the ideas of e-Government Services Professionals, IT experts, University lectures and students to prepare a list of recommendations for the development of e-Government services in the future. We also conducted a literature review to study the others research papers, thesis, books and reports to find the challenges on e-Government services. We also discussed some of the challenges faced during data collection process.

Chapter 4

Results and Analysis

4.1 Introduction

The objective of this chapter is to present findings from questionnaire and literature review. Based on these findings, it is necessary to restate and examine the study's objectives and research questions. The ramifications of the findings are then examined. Finally, the summary section summarizes the findings and conclusions.

The result of this research is based on 120 respondents from various organizations and companies in Afghanistan and a systematic review of about 50 research papers, reports, books and websites.

4.2 Questionnaire Layout

The questionnaire of this study consist of three sections. Section 1 are the demographic questions Section 2 are about general information about research topic Section 3 are the main questions (Challenges and Recommendations) related to research topic. The part 1 consist of 3 questions are background information questions though about the respondents, like age, education level and job. Part 2 consist of 3 questions about general information about e-services in Afghanistan. Part3 consist of 15 questions are the main questions about the challenges of e-government services in Afghanistan. Part 4 are the questions are about recommendations for the development of e-government services in Afghanistan. The respondents select minimum of 5 options from list of recommendations from literature review. The part 5 questions are descriptive questions through we collect the information about the challenges and recommendations of e-government services for future development in Afghanistan.

4.3 Analyzing Demography Questions from Online Survey

Gender: The data provides the gender distribution within the sample population. Out of the total sample, 89.2% are males, while females make up only 10.8% of the sample. This indicates a significant gender imbalance, with a higher representation of males in the sample.

Age: Regarding the age distribution the majority of the sample accounting for 69.2%, falls within the age range of 18-30 years old. This suggests that the sample is predominantly composed of young adults. A smaller proportion of the sample 26.7%, falls into the age range of 31-45 years old. 3.3% people who are 46 years or older. while an even smaller 0.8% portion consists of individuals who are under 18 years old.

Education Level: Looking at the sample population's educational attainment it shows that 61.7% of them are bachelor's degree holders. This suggests that the sample's educational attainment is rather high. Furthermore, out of the sample 1.7% just have a high school diploma whereas 32.5% have a master's degree and 4.2% doctorate degree.

Designation: Analyzing the designation or job roles held by individuals in the sample it can be observed that the largest category at 26.7%, consists of University Lecturers, 20% made up IT experts in e-government department and other organizations, 13% of the sample is are e-government professionals at e-government department, 7.5% students at university, 13.3% are ICT Worker at private organizations, The remaining 19.2% of the sample consists of individuals with various other designations

Table:4.1: Analysis respondents profile (N=120)

Demographic Variable	Category	Sample	Percentage
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Gender	Male	107	89.2%
	Female	13	10.8%
Age	Under 18 years' old	1	0.8%
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	Master's degree (e.g. MA, MSc)	39	32.5%
	Doctorate degree (e.g. PhD)	5	4.2%
Designation	E-Government Services professional at e-government Department	16	13.3%
	IT expert at E-Government Department or other local government organizations	25	20%
	ICT Worker at Private organizations	16	13.3%
	Student at University	9	7.5%
	Lecturer at University	32	26.7%
	Other	23	19.2%

Overall, the data provides insights into the gender distribution, age distribution, education levels, and designations of the sample population. These findings can be valuable for understanding the demographics and characteristics of the sample which can have implications for various analyses and decision-making processes.

1. Are you familiar with the concept of E-Government Services (Electronic Services)?

Based on the provided data, where 95.8% of respondents are familiar with the concept of e-government services and 4.2% are not.

Familiarity with the Concept of e-Services

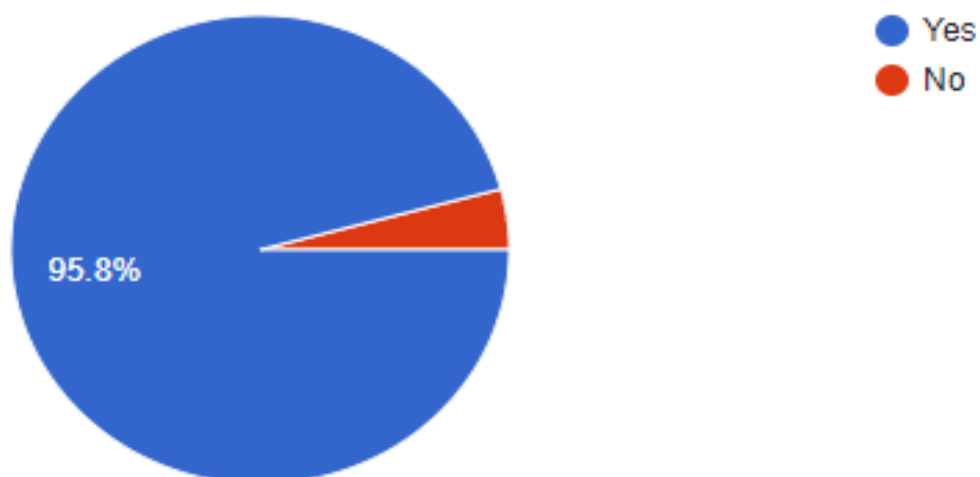


Figure 4.1 Shows Familiarity with the Concept of e-Services

We can analyze the figure as follows:

The information shows that most people who were surveyed knew a lot about the idea of an electronic service, or e-service. The fact that most respondents were aware of this idea indicates that the demographic being polled had a general awareness of electronic services.

2. How often, do you use e-services?

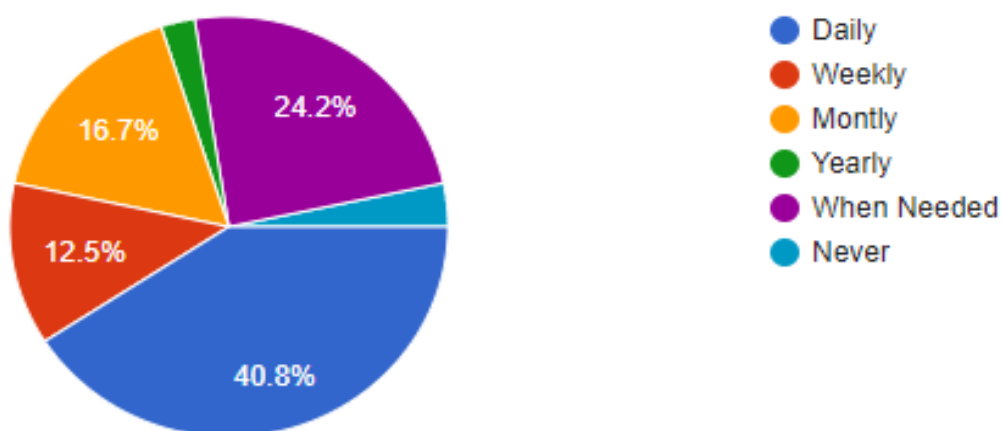


Figure 4.2 the use of e-government services

Based on the information provided by respondents, there are 40.8 % of people who are using e-services daily which is the high percentage of respondents.

24.2% of the samples are the people who are using e-services when needed is in the second grade 16.7% are the respondents who are using e-services monthly, 12. % are the respondents who are using e-services Weekly, 2.5% are the respondents who are using e-services Yearly the remaining 3.3% are the respondents who never use e-services.

4. How confident are you in the ability of the Afghan government to successfully implement E-Services in Afghanistan?

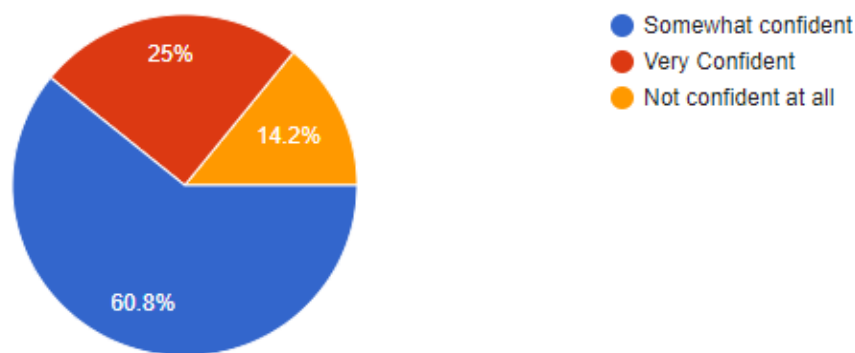


Figure 4.3 shows the ability of Afghan Government in the implementation of e-government services

Based on the provided data, where respondents were asked about their confidence in the ability of the Afghan government to successfully implement E-Services, the analysis of the figure is as follows:

- Somewhat Confident: 60.8%
- Very Confident: 25%
- Not Confident at All: 14.2%

We can analyze the above graph as follow:

Moderate to High Confidence: Most respondents indicated that they were somewhat confident in the Afghan government's capacity to successfully provide e-services, to varied degrees. Respondents expressed a degree of confidence in the government's ability to carry out the implementation, with a total of 60.8% indicating some degree of confidence and 25% indicating extremely high confidence.

Moderate Confidence: The proportion of respondents (25%) who stated that they were relatively confident indicates that, while they have some reservations or uncertainties, they still have a respectable level of confidence in the government's capacity to execute E-Services.

4.4 Challenges on e-Government Services in Afghanistan

Based on the provide data we can observe the following regarding the challenges with E-Services in Afghanistan:

Lack of IT infrastructure: The majority of respondents (59 people) rated the lack of IT infrastructure as a high problem. This indicates that there is a significant concern about the insufficient IT infrastructure to support the electronic services. Additionally, 54 people rated it as Medium indicating that it remains a prominent challenge and the remaining are 7 people with low rate.

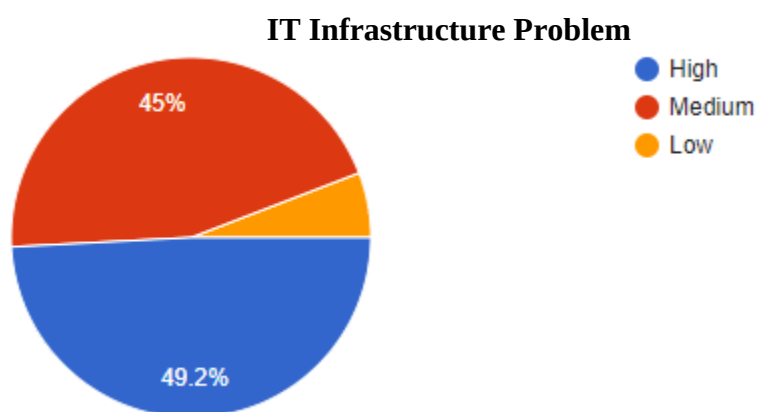


Figure 4.4 Shows the Percentage of Challenge - IT infrastructure

Security Vulnerabilities: Based on the gathered information form survey, the major respondents (72) people rated as high problem. This indicates that there is a significant concern about the challenges on electronic services (e-services) in Afghanistan, 37 people rated as Medium and remaining people 11 people are with low rated.

Security Vulnerabilities Problem

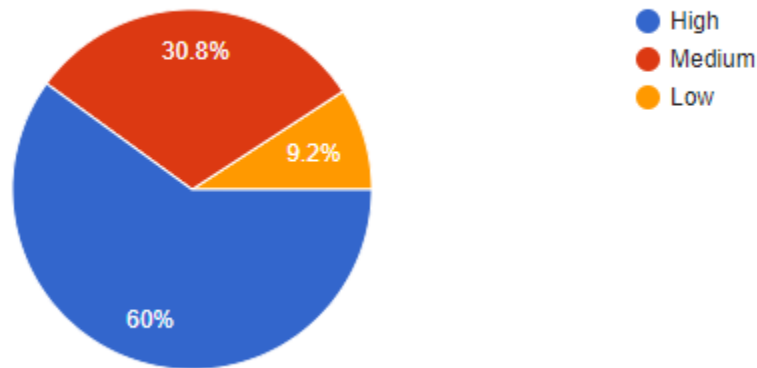


Figure 4.5 Show the percentage of Security Vulnerabilities Problem on e-Government services in Afghanistan

Internet Connectivity: internet connection is an important part of network connection by which all online activities are done through internet connection. Based on the collected data in this survey, 67 people rated as high problem, 30 people rated as Medium and remaining 23 people rated as low problem.

Internet connectivity Problem

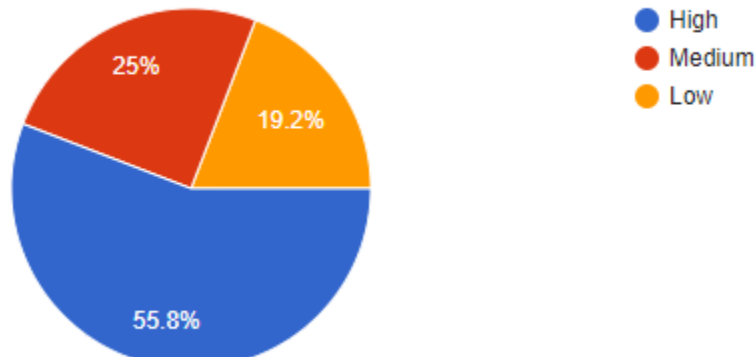


Figure 4.6 Shows the Percentage of Internet Connectivity Problem in Afghanistan

Lack of Electricity: electricity is the vital part of electronic service and devices, because all electronic devices need for electricity for using. In this survey based on the gathered information 76 people rated as high problem which indicated the significant part of the e-services. 32 people rated as Medium and remaining 12 people rated as low.

Electricity Problem in Afghanistan

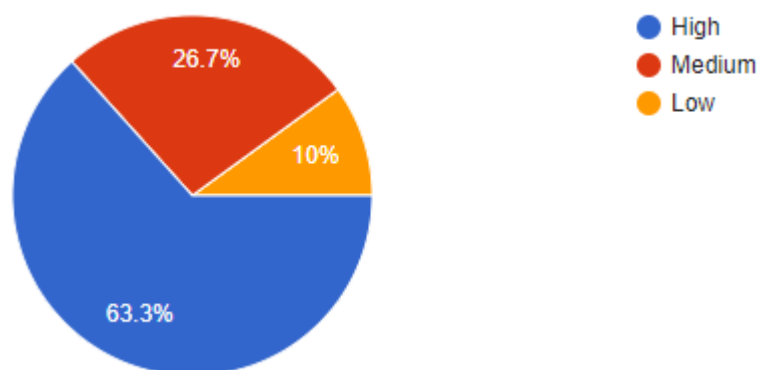


Figure 4.7 Shows the Percentage of Electricity Problem in Afghanistan

Limited Financial Resources: Financial support is an important part of all activities done by human and computer , according to this survey 56 people rated this problem as high level, 48 people rated this problem as Medium and remaining 16 people rated as low level.

Financial Problem

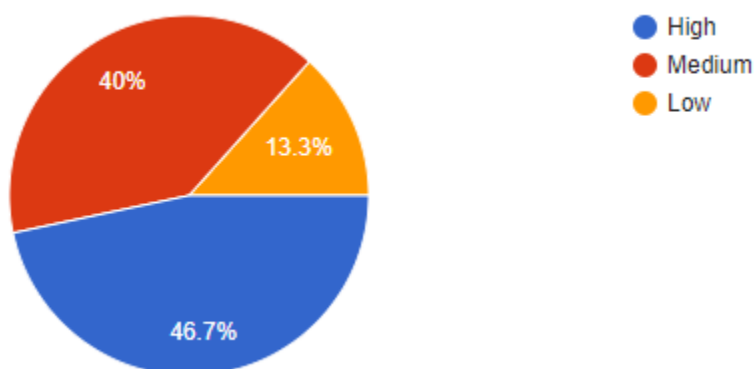


Figure 4.8 Shows the percentage of Financial problem in Afghanistan

The Cost of E-services: Based on the data provided by online survey 54 respondents rated as Medium level , which is the high percentage in this survey ,means that the cost of e-services in Afghanistan is in medium level which is no high and no low ,the respondents who rated the cost of e-services in Afghanistan as high level are 41 people which explain that the cost of e-services is some ever high , the remaining respondents who rated the cost of e-services as low level are

25 people, According to 25 people, there is no serious problem about the cost of e-services in Afghanistan.

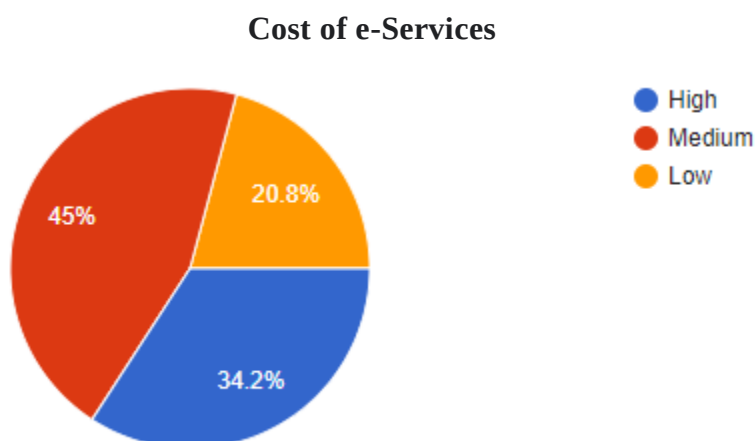


Figure 4.9 Shows the Percentage of Cost of e-services in Afghanistan

Lack of Top management Support: Top management is a person or group of people who directs and controls an organization at the highest level, when the CEO and other senior managers commit time to reviewing plans, following up on results, and resolving management issues, base on the provided data by online survey the 61 (50.8%) people selected the challenge as high level , 49 (40.8%) people selected the challenge as medium level and remaining 10 (8.3%) people selected the mention challenge as low level.

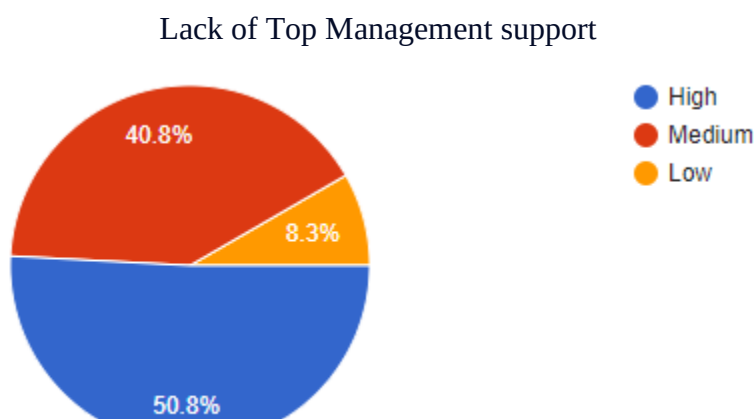


Figure 4.10 Shows the Percentage of Top Management support

Lack of Cooperation between Government Organizations:

One of the problem in government organizations is the lack of cooperation, this challenge reduces the value of e-services and not allow to promote e-services in Afghanistan. The data provided by this survey, 58 (48.3%) people rated as Medium level, 50 (41.7%) respondents rated as High level, the remaining 12(10%) rated as low level. This indicate that the majority of the respondents select the problem as Medium level and many government organizations faced with this problem in Afghanistan.

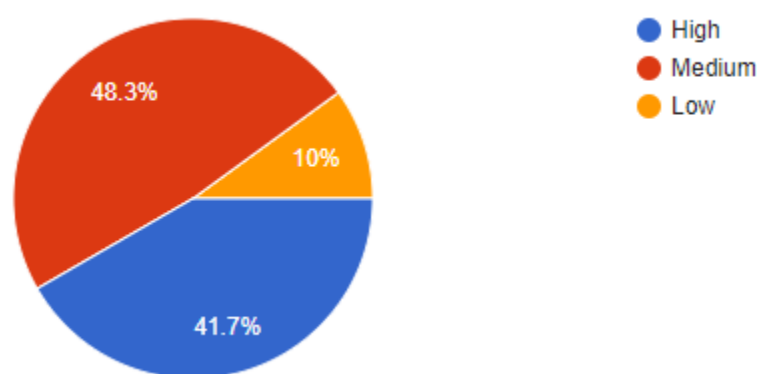


Figure 4.11 Shows the Percentage of Lack of cooperation between government organizations

Presence of Traditional Procedures in Organizations: One of the problem in government and private organizations of Afghanistan that prevent the promotion of e-services, is the using traditional procedures and systems and not allowed to implement the modern technological electronic systems, because people are familiar with the old traditional systems the use of modern systems and technologies seems to be a difficult task. Based on the information collected from this survey 62(51.7%) people rated as High problem, this indicate that majority of the respondents select the problem and there is a significant concern about using traditional procedures and systems in organizations. 53 people rated as Medium and remaining 5 people rated as low problem.

Presence of traditional procedures in organizations

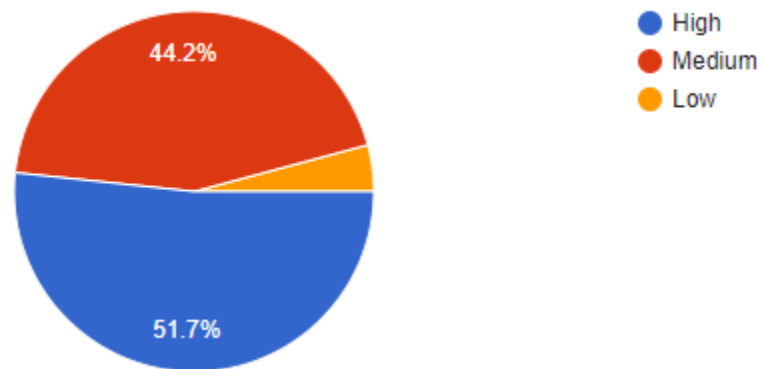


Figure 4.12 Shows the Percentage of Presence of traditional procedures in organizations

Lack of Policy and Regulation for E-Services Usages: Based on the information provided by this survey, 57 (47.5%) people rated this problem as high-level problem of e-services in Afghanistan, this indicate that there is a significant concern about lack of policy and regulations for e-service usage in Afghanistan. 48 (40%) of the respondents rated as medium level and remaining 15 (12.5%) of respondents rated as low-level problem.

Lack of policy and regulation problem

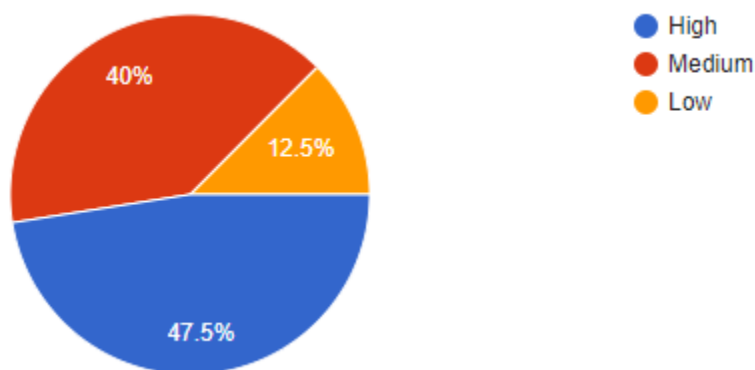


Figure 4.13 Shows the percentage of Policy and regulation problems in Afghan Organizations

Social Problems: The social problem is one of the problems that all Afghans are dealing with. A series of problems have arisen in the implementation of a number of electronic services in Afghanistan, which prevented their implementation on time, such as electronic ID and electronic passport services. The information provided by this survey, 68 (56.7%) of the respondents rated as high-level problem. This indicate that there is a significant concern about the social problem in implementation of e-services in Afghanistan. 39 (32.5%) of the respondents rated the problem as medium level and remaining 13 (10.8%) of the respondents rated as low-level problem which shows the deficiency of social problems on e-services.

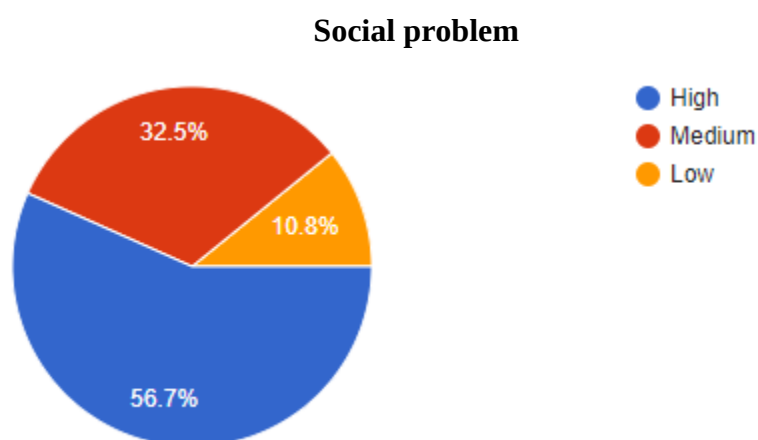


Figure 4.14 Shows the percentage of Social Problems in Afghanistan against of e-government services

No Awareness of Citizens from E-government Services: Based on the provided information from the survey, 55 (45.8%) people rated as high level problem. This indicate the significant concern about the awareness, most of the people don't have awareness from development and using e-government services. It means that people need for regular training program for awareness of e-services. 34 (28.3%) people from the survey rated the problem as Medium level and remaining 31 (25.8%) people rated the mentioned problem as low level.

Awareness of People from e-government services

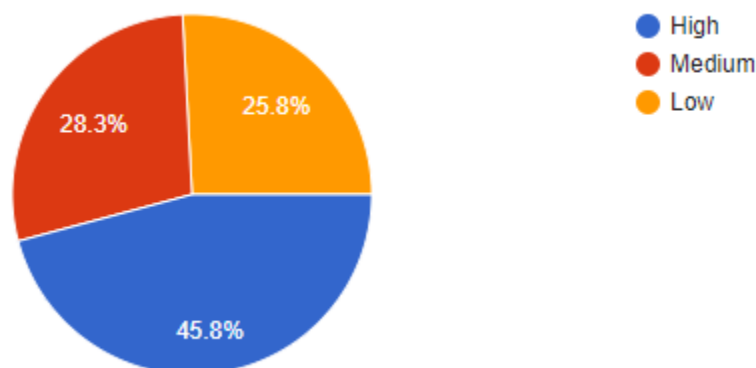


Figure 4.15 Shows the percentage of no awareness against of e-government services

No regular Training Program: This challenge is dependent on the awareness of people from e-government services, the data collected from online survey, there are 79 (65.8%) people rated the problem as high level. This indicate that most of the people in Afghanistan does'nt have any regular training program from government, because of there is no awareness of e-services, 29 (24.2%) of respondents rated the mentioned problem as medium level and remaining 12 (10%) respondents rated the mentioned problem as low level.

No Regular Training Program

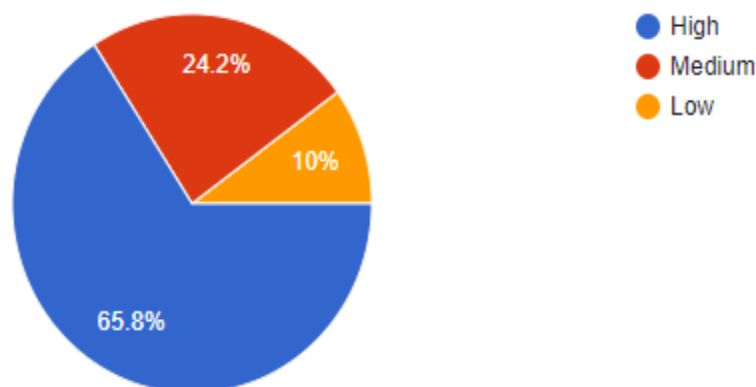


Figure 4.16 Shows the percentage of No regular training program

Trust Issue: Based on the information provided by online survey there are 59 (49.2%) of the respondents selected the problem as high level, this indicate that most of the people don't have trust on the implementation and use of e-government services in Afghanistan but 38(31.7%) respondents rated the mentioned problem as medium level and 23 (19.2%) of respondents rated as low level , it means that some of the respondents are hopeful for the e-services in Afghanistan and seem the problem as medium and low frequency.

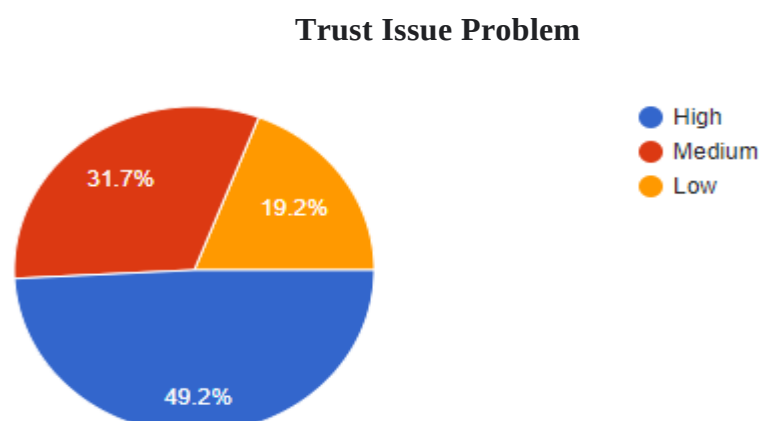


Figure 4.17 shows the percentage of Trust issue in Afghanistan against of e-government services

Political Issue: One of the main challenges that prevent the implementation and promotion of e-government service in Afghanistan is the political issue. Many of the e-services projects fails and take in pending in case of political problems, based on the information from online survey there are 76 (63.3%) of the respondents rated the problem as high level. This indicates the significant concern about the e-services. There are 38 (31.7%) of respondents rated the mentioned challenge as Medium level and remaining 6 (5%) of the respondent rated as low level , This means that there are some people who do not consider political issues important for the implementation of electronic services.

Political Problem

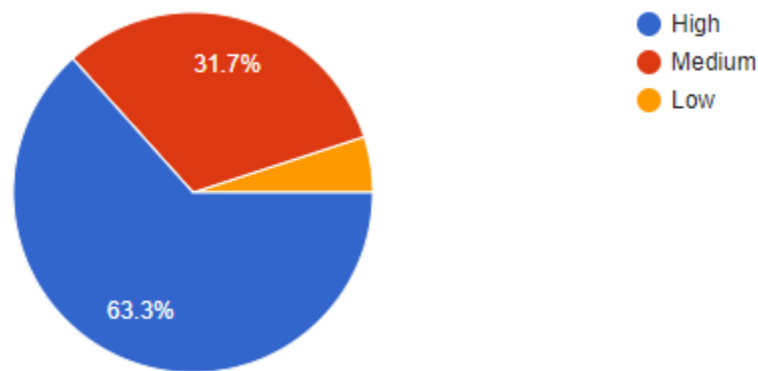


Figure 4.18 shows the percentage of Political Problems in Afghanistan against of e-government services

Statistical Information on Challenges on E-Services Using Chart and Table

Table 4.2 Shows Challenges on e-government services with three parameters, high medium and low

	Challenges	High	Medium	Low
1	Lack of IT Infrastructure	59	54	7
2	Security vulnerabilities	72	37	11
3	Internet connectivity	67	30	23
4	Lack of electricity	76	32	12
5	Limited financial resources	56	48	16
6	The cost of e-services	41	54	25
7	Lack of Top management support	61	49	10
8	Lack of cooperation between government organizations	50	58	12
9	Presence of traditional procedures in organizations	62	53	5
10	Lack of policy and regulation for e-services usages	57	48	15
11	Social Problems (Culture /Digital Divide)	68	39	13
12	Awareness of Citizens from e-government services	55	34	31
13	No regular Training Program	79	29	12
14	Trust Issue	59	38	23
15	Political Issue	76	38	6

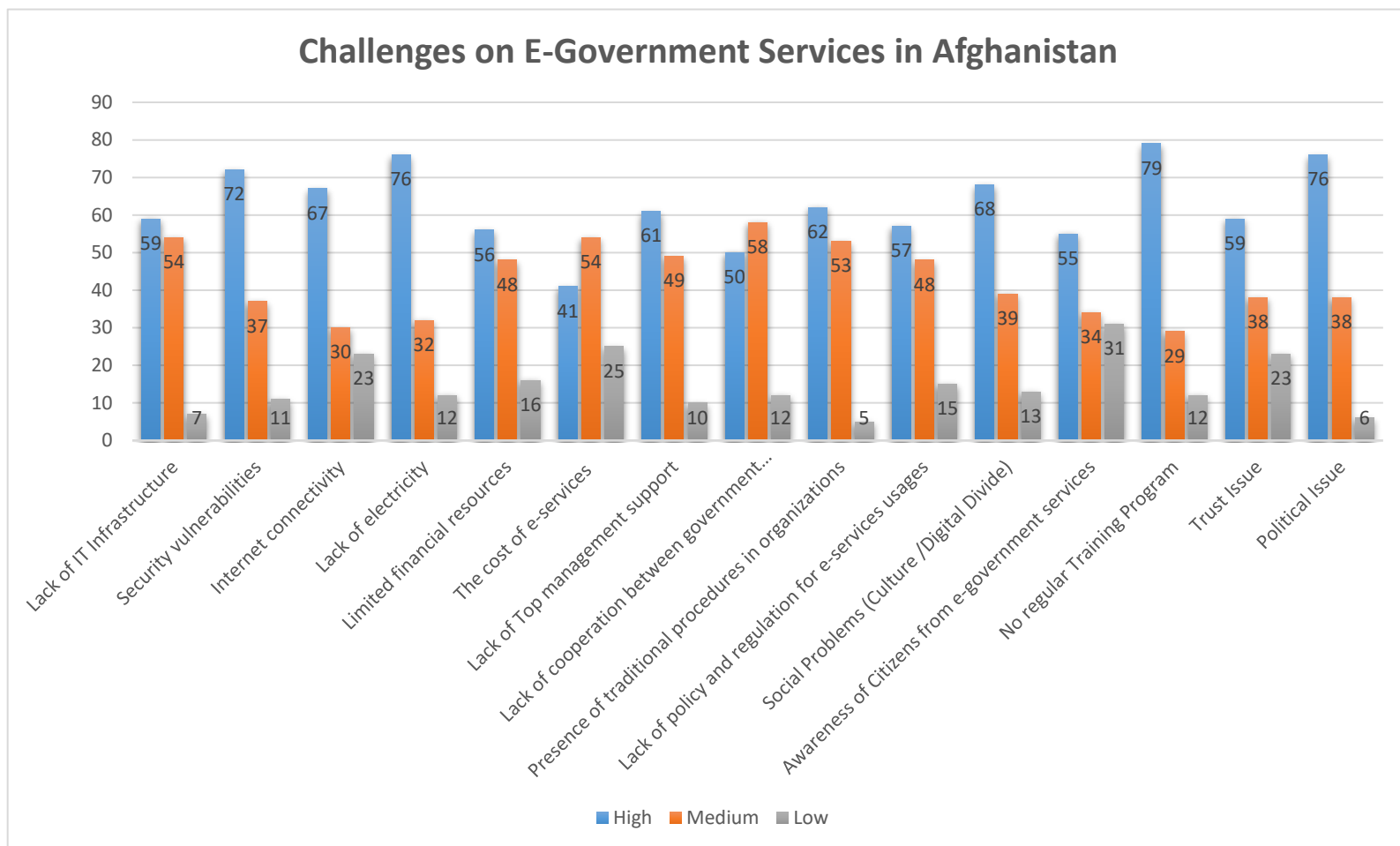


Figure 4.19 Identify the Challenges on e-government services with three variables

Please select minimum 5 recommendations which are necessary for future development of e-services in Afghanistan, you can select more than 5 options.

Recommendation are the part of research in which all respondents select many options from a list of recommendations provided on the page of survey for viewers.

120 responses

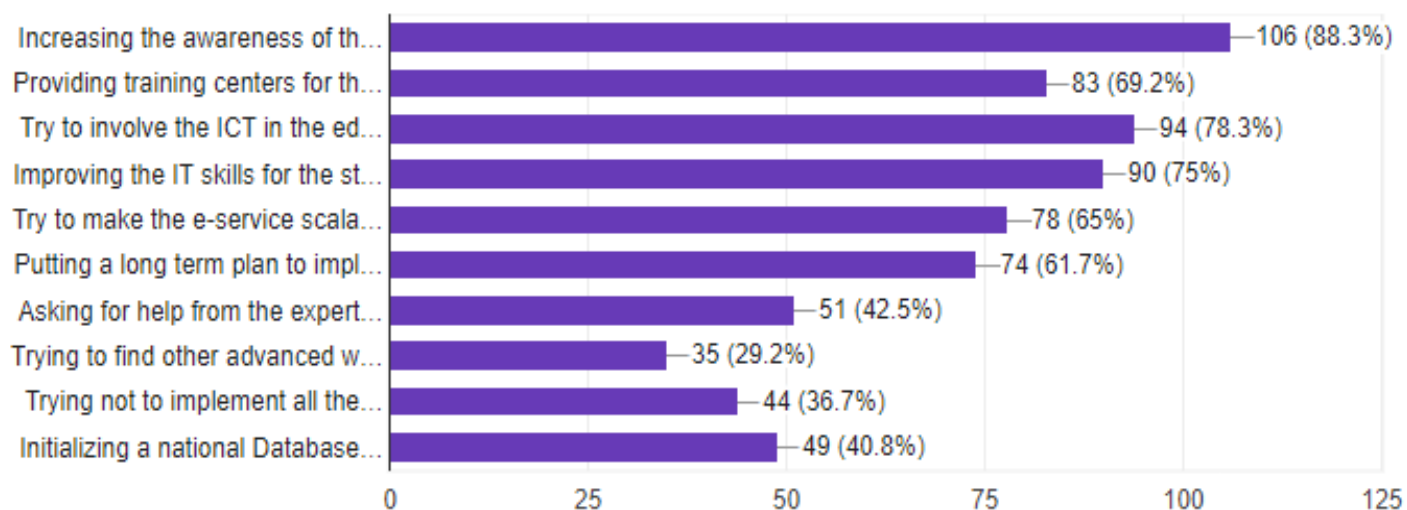


Figure 4.20 Identifies the specific recommendations for the implementation and improvement of e-government services

Based on the information provided by this survey, there are (88.3%) 106 of the respondents who select the increasing the awareness of the concept of e-government services, this is the significant questions of the survey and has majority of respondents. The second recommendation selected by respondents is the involving the ICT in education System. There are 94 (78.3%) of respondents for this question. The third recommendation selected by respondents is the Improving the IT skills for the staff that will work on the e-service project. There are 90 (75%) of responses for this question. The fourth recommendation selected by is the Providing training centers for the limited income citizens to enhance the e-literacy. There are 83(69.2%) of people responded this question. The fifth recommendation selected by is the Try to make the e-service scalable for future growth there are 78 (65%) of respondents for this question. The sixth recommendation for selected by respondents is the Putting a long-term plan to implement the e-government services. There are

74(61.7%) of people rated this question. The seventh recommendation selected by respondents is the Asking for help from the experts in this field, such as a foreign support. The people rated this question are 51(42.5%). The eight-recommendation selected by respondent is the Initializing a national Database (Census Database) to the city that has all the required information for the citizens, and providing security and privacy for the information. The people rated this question are 49(40.8%). The ninth recommendation selected by respondents is the Trying not to implement all the services at once because there is no point of implementing a service that would not be used by the beneficiaries. The people rated this question are 44(36.7%). The last recommendation selected by respondents is the Trying to find other advanced ways to implement the e-services that can be less expensive and consume less time with things such as using the cloud Computing. There are 35(29.2%) people rated this question. It shows the lowest percentage in graph.

4.5 Analyzing of Descriptive Questions:

1- Have you ever used any e-service(s) provided by the Government of Afghanistan if yes please write down their names?

Based on the information provided by the survey, there are 102 responses with Yes and 18 responses are with no answer. It means that 85% of respondents have used e-government services in Afghanistan and remain 18(15%) respondents have not used any e-services. It means that the majority of respondents have used the e-services. The following e-services names are mentioned by the survey respondents. The services are E-ID (electronic identity card), e-Passport, Asan khidmat, e-learning , Online teaching , Online financial services , Online formal letters , HELMS (Higher Education Learning Management System) online tax filling , e-Visa , m-paisa , online flight ticket booking , paying electronic bill, Online exam system, ATM , e-Complaint System, Nexa (National exam Authority) System , Master Card , AZIPAY Services , Salam Network Services ,

internet services , e-tax system of Ministry of Finance , open and close doors electronically in Kabul international Airport, Bank Services , Network service of Afghan Wireless , MTN , Afghan Telecom Etisalat and Roshan , Jobs seeking websites like ACBAR.ORG , JOBS.AF ... , HRM electronic systems in government organizations, Afghanistan Payment System , mobile credit adding and transformation , shopping from online market and social media ,Employees attendance with finger in some government organizations.

2- In your opinion, what are the main challenges against of e-Government-Services in Afghanistan?

The main challenges on e-government services are the main part of this research. Based on the information provided by the respondents in this survey, they have written their own opinions, there may be some challenges which are not included by collected of questionnaire related to the challenges on e-government services, the main challenges written by respondents in this survey are following.

- a- Cost of e-services: There is a high cost for utilizing e-services, this may delay the process of promotion of e-services in Afghanistan.
- b- Lack of electricity: It is the main challenge which more people need, in case of this problem many people can't get benefits from e-services in Afghanistan.
- c- Slow internet connection: Internet problem is also depending on electricity, in most of people don't have access to internet connection with slow signal and lack of electricity.
- d- No awareness on e-services: there is low or no awareness on using e-services, most people of Afghanistan don'ts have correct awareness in using e-services.
- e- Lack of Professionals and experts in e-services: Afghanistan is the country in which most of people are uneducated, so there are low number of professionals and experts in development and management of e-services.

- f- Lack of enough budget: Budget is most important issue for supporting e-services
Afghanistan is a poor country, so government of Afghanistan doesn't have enough budget for the implementation and promotion of e-services.
- g- No strategic plan for e-services implementation and promotion: A strategic plan is organized 5- 10 years' access, there is no acceptable and enforceable strategic plan to develop and implement e-services in Afghanistan.
- h- Limited infrastructure: Infrastructure is another problem which common organizations face, it means infrastructure is what needs to be in place to support our existence or in place to move people, entities, or objects from point A to point B usually on or through a secure right-of-way
- i- Digital literacy: Digital literacy means having the skills you need to live, learn, and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices.
- j- Security concerns: Security is the important issue for the availability and stability of e-services. There is no strong security for e-services in Afghanistan.
- k- Corruption: Corruption is a common problem in all government organizations specially in Afghanistan, based on this, most electronic services cannot be implemented correctly
- l- Lack of technical and human resources: for the implementation of e-services, there should be enough resources, Hardware, Software, Data, and Human resources.
- m- Cultural diversity: Appreciating that society is made up of many distinct groups with various interests, skills, talents, and needs is what cultural diversity is all about. It also implies that you understand that others in society may hold different religious beliefs and sexual orientations than you.

- n- Privacy issues: privacy is only an issue to the extent that it involves the use, disclosure, etc. of personal information. Information is only personal if it is possible to uniquely identify an individual from the information in question.
- o- Integration challenges: system integration is very important for sharing same information, but there is a problem in Afghanistan that e-services are not integrated with each other.
- p- User-centric design problem: User-centered design is never easy: it takes a lot of time and energy to understand consumers, identify their requirements, and satisfy those needs through design. Having to please multiple user groups makes it even more difficult.
- q- Lack of intention: An intention is idea that you plan (or intend) to carry out. If you mean something, it's an intention. Your goal, purpose, or aim is your intention.
- r- High cost of internet: High cost of internet packages is a common problem in Afghanistan, which cause to reduce the usage of e-services.
- s- Language barriers: Language barriers typically emerge when two people who speak different languages are unable to comprehend one another and communication breaks down. They can also come from physical language disabilities which include stuttering, articulation disorder and hearing loss.
- t- Lack of coordination and collaboration: A lack of coordination can lead team members to double up on tasks or get delayed when waiting on decisions or deliverables from their colleagues. In both cases, time is wasted, resources are misused, and money is lost.
- u- Lack of management from government: the government doesn't support the private sectors and does not employ the skilled and educated people in the right position.
- v- Availability problems: Availability issues can occur due to various reasons, such as hardware failures, network outages, software bugs, human errors, security breaches, or

natural disasters. Availability issues can have negative impacts on the user experience, customer satisfaction, revenue, reputation, and compliance of a system.

- w- Political problems: political issue is the biggest problem in development and implementation of e-services. A number of senior officials who were under the influence of other countries did not want electronic services to be delivered in a timely and correct manner.
- x- Resistance to change: Resistance to change is unwillingness to adapt to new circumstances or ways of doing things. It can happen with individuals, relationships, or within organizations
- y- Lack of capacity and Skills: there is lack of capacity and enough skills for development, implementation and management of e-services in Afghanistan.
- z- Illiteracy of Afghans people: The World Bank places Afghanistan's adult literacy rate (percentage of people aged 15 and above who can read and write) at about 37% in 2021, which marks a 6% increase from 2011.
- aa- Lack of modern learning system in schools and universities: Many schools and universities in Afghanistan follow the traditional and classic systems, there are electronic learning systems in low level and less usable.
- bb- Instability: there is instability in availability and usability of e-services in Afghanistan, many e-services systems are unstable, the e-services can be easily hacked,
- cc- Not involving of employees in decision making: e-services in Afghanistan are developed under the top leadership, so there is no or low level of involving employees in development and implementation of e-services.

3- What are your recommendations/Comments for future development of e-Government Services in Afghanistan?

Based information provided by respondent in this survey, they shortly explain their ideas about the e-government services in Afghanistan, the recommendations that respondents mentioned are follow:

- a- Providing training and workshops for citizens to get knowledge about e-government services.
- b- The tax should be reduced on IT and electronic devices.
- c- Creating partnerships and collaboration with the private sector in a way that private companies can financially support or contribute to the implementation of e-government services.
- d- The government should make a long-term plan (strategic plan) for e-services development and implementation.
- e- The IT subject should be added at schools, using IT in education systems
- f- The e-government services should be designed scalable for improvement.
- g- The cost of e-services should be reduced.
- h- For the success implementation of e-Government services in Afghanistan, it is must to organize strong professional team, train and support it inside and outside the country.
- i- Make and approved Proposals for e government services.
- j- For citizen's conferences and workshop should be arranged to get knowledge about e-services
- k- Government should develop efficient e-services that work in weak internet connection.
- l- The government needs to hire professionals for the implementation of e- services.
- m- Afghan Government should work on digitalization at all sectors which brings clearly and tasks are done very fast.

- n- Afghan Government should work on stabilization of the internet connectivity for implementation and promotion of e-services.
- o- Afghan Government should prioritize cybersecurity for good governance.
- p- There should be an alignment between IT and non-IT departments in every government entity.
- q- Localization efforts should be considered in development and implementation of e-services.
- r- Afghan government should create a centralized database for storing citizen information for security and quick access purposes.
- s- The e-services are developed by Afghan government the scalability should be considered during development.
- t- Steady and Stability should be considered during e-government services.
- u- Afghan Government should intensify the learning process of modern technology in educational centers (universities, schools, training centers)

Chapter 5

Conclusion and Future Work

5.1 Introduction

The objective of this chapter is to present the conclusion of this study which focus on challenges and recommendations of e-Government services for future development in Afghanistan. This chapter also present the recommendations and future work for the mentioned research topic.

5.2 Conclusion

This section of study presents conclusions that were mad in this research. We come to conclusion of Challenges and recommendations of e-Government Services in Afghanistan for future development. The main challenges are IT Infrastructure, Security vulnerabilities, lack of internet connection, lack of electricity, limited financial resources, cost of e-services, lack of top management support, No Training programs, presence of traditional procedures in Afghanistan, Lack of policy and regulation for e-services usages social political issues and lack of cooperation. This study also discusses a theoretical framework of recommendations of e-Government services for future development in Afghanistan. These recommendations are providing training and workshops for citizens to get knowledge about e-government services. The tax should be reduced on IT and electronic devices.

The government should make a long-term plan (strategic plan) for e-services development and implementation. The IT subject should be added at schools, using IT in education systems to increase the knowledge of information technology among all students. The e-government services should be designed scalable for improvement, because every project has not been completed 100% successfully so every project needs for development in the future according to user's requirements

The cost of e-services should be reduced. When a service is cheap, it becomes popular quickly among people. For the success implementation of e-Government services in Afghanistan, it is must to organize strong professional team, train and support it inside and outside the country. The government needs to hire professionals for the implementation of e- services. Professionals are the people who have enough knowledge about a specific knowledge area. There is also a shortage of electronic service professionals in Afghanistan. Afghan Government should work on digitalization at all sectors which brings clearly and tasks are done very fast. Afghan Government should work on stabilization of the internet connectivity for implementation and promotion of e-services during development.

5.3 Future Work

The research on e-Government Services in Afghanistan: Challenges and recommendations for future development has many limitations and areas for future work. The challenges of e-Government services in Afghanistan include limited data availability, ongoing monitoring and updates, evaluating implemented e-Government services systems, conducting comparative analysis with other countries, incorporating stakeholder perspectives, and offering specific solutions and recommendations.

5.4 Summary

This chapter is to present the conclusions that are made in this research, there are fifteen challenges on e-Government services in Afghanistan , and a list of recommendations for future development of e-services, the challenges are lack of IT Infrastructure , internet connectivity , lack of electricity, limited financial resources , cost of e-services, lack of top management support , lack of cooperation between government organizations , presence of traditional procedures in organizations , lack of policy and regulations for e-services usage , no awareness on e-services, no regular training program , trust of people on e-services, political problems.

There are some of recommendations for the further development of e-government services that prepared through academic literature review and an online survey by prepared questionnaire.

Providing training and workshops for citizens to get knowledge about e-government services.

The tax should be reduced on IT and electronic devices. Creating partnerships and collaboration with the private sector in a way that private companies can financially support or contribute to the implementation of e-government services. The government should make a long-term plan (strategic plan) for e-services development and implementation. The IT subject should be added at schools, using IT in education systems. The e-government services should be designed scalable for improvement. The cost of e-services should be reduced. For the success implementation of e-Government services in Afghanistan, it is must to organize strong professional team, train and support it inside and outside the country. Make and approved Proposals for e government services. For citizen's conferences and workshop should be arranged to get knowledge about e-services Government should develop efficient e-services that work in weak internet connection. The government needs to hire professionals for the implementation of e- services.

Afghan Government should work on digitalization at all sectors which brings clearly and tasks are done very fast. Afghan Government should work on stabilization of the internet connectivity for implementation and promotion of e-services. Afghan Government should prioritize cybersecurity for good governance. There should be an alignment between IT and non-IT departments in every government entity. Localization efforts should be considering in development and implementation of e-services. Afghan government should create a centralized database for storing citizen information for security and quick access purposes.

The e-services are developed by Afghan government the scalability should be considered during development. Steady and Stability should be considered during e-government services.

Afghan Government should intensify the learning process of modern technology in educational centers (i.e. universities, schools, training centers).

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