

# **Mobile Government and Digital Economy Relationship and Challenges**

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## **Abstract**

*The rapid development of information and communication technologies (ICT) helps governments to enhance the communications between their agencies through gaining speed, capacity, simplicity, and precision, which improve the productivity and effectiveness. Digitalization of the services make a new insurmountable prospect for world economy which affecting different sectors such as energy, banking, retail, publishing, transportation, education, health and media. This study aims to construct a theoretical framework describe the relationships between different factors impacting the m-government services and digital economy. Through review the updated and available literature about m-government and digital economy implementation stages and its challenges. The results of this study provide more accurate and comprehensive understanding of the association between m-government development and digital economy, also this study offers a set of recommendations as well as suggestions for the digital economy and m-government services improvements.*

**Keywords:** *Mobile government; Digital economy; E-government; Mobile services*

## **1 Introduction**

The rapid development in information and communication technology (ICT) has directed to essential changes in the people life in various fields, whether at the individual or organization level, or at the level of societies such as: environment and economy. This development will open a new era of economic processes, also creates a new kind of economy known as the digital economy which impact positively on society in general [1].

The digital economy is defined as the economy that has been enabled by digital technologies, and nowadays the digital economy has become a very important factor for economic growth [2; 3]. The digitalization of information and communication creates new and insurmountable horizons for the global economy that affect many sectors and government services [3; 4].

M-government can be defined as a subcategory or a supplement to the e-Government through the usage of diverse mobile and wireless technologies, services, applications, devices to provide information and services to citizens, businesses and all governmental units, thus creating better opportunities for the public to participate and communicate with the government [5; 6; 7]. In other words, using ICT to create new way of business and to increase the effectiveness of the services, whether within government institutions themselves or in their dealings with citizens, to simplify service delivery processes [7; 8]. In addition to providing all citizens' needs for information about services, laws, regulations and legislation through the World Wide Web [1; 9; 10].

Overnight, the Coronavirus (COVID-19) has had dire effects on work and life patterns in various countries and sectors, that changes are not clear yet, but among the few things that have become clear in this crisis is that the future supports the trend towards digital transformation and increased digitalization [11]. Digital services are becoming more and more important, and they permeate an increasing number of sectors and activities, including m-government and digital economy which require study the stakeholders requirements and demands regarding to the services providing to them, and to identify the challenges that face the user and government of use these services, since the digital economy depends heavily in mobile services there is a need to study the relationship between m-government development and digital economy[12].

For now, it appears that success is the ally of companies and organizations that are leaner and more resilient in adopting digital technology, as others try to adapt quickly in response to the challenges facing their business. In the time of the COVID-19, the telecommunications sector is no longer limited to traditional communications and the search for information, but rather has become the backbone for the use of data, content and digital applications by individuals, governments and companies to ensure the continuation of economic and social activity in light of social distancing and total closure in most countries in the world [11].

The COVID-19 epidemic also demonstrated the urgent need to adopt digitalization in providing services to citizens [12]. These services, although some of them exist, have not been used in the required manner imposed by development and necessitated by modernization in a time of technological challenge [4]. However, there is a need to study the relation between m-government implementation and digital economy [11; 12].

The information revolution is the real treasure that opened many doors to humanity as the government is the main collector and source of information, in addition to being a provider of transactions and services needed by citizens and business establishments, as individuals accumulate in queues waiting to receive or provide the required service, which created a perception of the possibility of providing services around the clock, every day, every day of the week without moving to government institutions that provide the services, using their smart devices to entering government services that uses advanced ICT, taking advantage of new patterns and new methods that contribute to accessing information, transactions and services [4;8].

Moreover, the use of traditional e-government can be a nuisance in a mobile environment [12]. The reason is due to the e-government design incompatible with the mobile environment; this will increase pressure on the government and companies that delay the deployment and use of the m-Government [11]. The aim of this research is to build a theoretical framework describing the relationships between the various variables that affect the adoption of e-government services and the digital economy during the COVID-19 pandemic [12].

The following section of this paper discusses the digital economy and m-government background, while the following section presents the challenges faced the implementation of digital economy and m-government. The subsequent section describes the theoretical framework and the hypotheses. The limitations of the study and ideas for future research directions are discussed and the contribution of the study is described in the conclusions.

## **2 Related Work**

In this section, the researchers defined the main concepts of this research which includes m-government, digital economy, m-government and digital economy challenges.

### **2.1 M-Government**

Mobile government (m-government) is defined as the use of many mobile platforms such as smart phones, personal digital assistants, tablets, cell phones, or mobile devices), to carry out the dissemination of government information and services provided to citizens in an independent manner, and location [5; 8]. M-government came to enhance the performance of public services management and administration as one of the main areas for societies and states. In fact, mobile phones are one of the most common devices most people carry [6]. One of the main benefits of the m-government is in narrowing the digital divide, because mobile devices are available to the majority of citizens. It facilitates setting up the Internet via mobile phone unlike fixed internet [6; 13]. Thus, the use of m- government provides flexibility and ease to use for all users, especially citizens in rural and

remote areas, who find it difficult to receive the services in traditional ways [14; 15]. Therefore, the idea of the m-government is based on the following, providing citizens with permanent contact (24) hours a day, (7) days a week, and (365) days a year [9]. In addition, the ability to secure all information, interactive and exchange activities, and services in one place, which is represented by the official website of the m-government [9]. Thus, achieving speed and effectiveness of linkage, achievement, coordination and performance between government departments they and each of them separately [16].

Representing the requirements of the m-government in solving the problems that exist in the real world before moving to the digital environment, which includes the documentation problems that exist in the real life, because there is no effective documentation that puts all government work documents in one place. [16] In addition to solving the legal problems of commercial exchanges and providing their technical and organizational means, and thus setting up all exchanges that deal with money on the Internet, such as the possibility of paying various government fees and bills directly on the Internet, and making this process coherent [13; 17]

It is noticed that there are multiple goals behind the m-government, such as: reducing the bureaucracy in the performance of business and working to collect all services and information to citizens so that they can benefit from them in an easy way [20]. The most important goals that the m-government seeks to achieve can be clarified as follows: Providing services to citizens in an easy, fast, and low-cost way, and reducing friction between government employees and citizens [9; 15]. Also, make information about all government laws and regulations available to citizens on the Internet to know the regulations that govern a specific topic or issue. Increasing the time available to perform the service so that the service can be obtained at any time throughout the day without committing to specific official working hours [17; 18].

## **2.2 Digital Economy**

The digital economy is the activity that results from everyday communications over the Internet. The backbone of the digital economy is hyper connection, which means increasingly connected people or institutions, machines, mobile technology, and the Internet of Things [19]. The term "digital economy" is rapidly becoming popular in the fields of economy, technology, and the Internet in light of a rapid digital transformation. Digital transformation, at its core, is about using the latest technology to do what we really do, but better [20]. This era witnessed a tremendous revolution in ICT that exceeded all expectations, ICT became the main engine for social, economic and political changes at the global level [13].

The development of ICT imposition of a new package of activities related to the economy and information, such as m-government that organizes electronic frameworks and legislation. The digital economy is the economic activity that results from billions of daily Internet connections between people, businesses, devices, data, and processes [2; 3]. It seems that the knowledge economy, or what is

known as the digital or electronic economy, has become a reality that everyone must deal with, as many countries are currently seeking to implement the provisions and data of this new economy through digital transformation in their societies, and digital transformation means how technology is used within institutions bodies, whether governmental or the private sector [21].

The digital economy spreads the "information and knowledge society", or what is called the knowledge economy, the networked society or the wireless community, and there are several definitions of the information and knowledge society, including what is seen as: Creating a set of strategic changes in the nature of the economic environment and its organization to become more responding and in harmony with the challenges of globalization, ICT, and sustainable development in its holistic and integrative concept.[20;2]. A society based on possessing knowledge and contributing to its creation, deepening and development, is more qualified than others to march on the path of progress and enter the world of globalization from its widest gates, and at all levels - economic and political, Social, cultural and scientific [3; 20]. Addition to that the spread of the information and knowledge society helps to encourage the building of m-government, e-government, e-banking, e-commerce, m-commerce, and e-management, and all of this needs to be continuously developed in the information and knowledge society Index by increasing the number of electronic devices [20;21].

### **2.3 M- Government and Digital Economy Challenges**

The challenges represent a different kind of pressure on the government before and after the adoption of mobile services and the digital economy [22]. M-government and digital economy share the same challenges [22]. Therefore, this section aims to contribute to this field by proposing a model which divided into technical and organizational challenges facing m-government and the digital economy [22]. As a result, this paper identified these challenges on the basis of a comprehensive literature review [22]

#### **2.3.1 Technical Challenges**

The implementation of m-government and the digital economy faces some technological difficulties, such as the lack of privacy, security, trust and the information and communication technology infrastructure, in addition law and public policy. Consequently, these critical obstacles in implementing m-government and digital economy are considered to be citizen concern [23; 24].

##### **2.3.1.1 ICT Infrastructure**

Lack of ICT infrastructure is one of the main challenges facing the implementation of m-government service and the digital economy [25]. Many developing countries suffer from the digital divide (the digital divide refers to the gap in opportunities between those who have access to the Internet and those who cannot), and they are

unable to deploy the appropriate ICT infrastructure to spread e-government [23; 10]. Thus, the ICT is the backbone of the cellular network, and the development tools needed to support all types of mobile phone applications such as the fourth-generation mobile communications infrastructure. The higher the level of human development, the more likely it is that citizens will use and accept digital services [23]. The lack of ICT is considered as one of the main barriers to the m-government and the implementation of the digital economy. Therefore, governments must work closely with the private sector to create modern infrastructure [24; 25]. In other words, ICT is one of the main challenges in starting digital government. Information and communication technology infrastructure are the driving force for organizations to implement e-services. The lack of ICT represents the main bottleneck for countries aiming to implement and maintain m-government and the digital economy [25].

### **2.3.1.2 Privacy, Security and Trust**

Privacy is a critical issue in implementing m- government and the digital economy in both developed and developing countries. In fact, privacy is one of the most important challenges facing the implementation of m-government and the digital economy [25]. Thus, privacy refers to ensuring a high level of protection for the information attributed to an individual. In addition, the greater the privacy of the information, the greater the citizen's confidence in using electronic services [25; 26]. Because citizens have a great interest in the privacy of their lives and the confidentiality of the personal data that they provide as part of obtaining government services [15; 26]. Thus, privacy must remain a priority when creating and maintaining m-government websites and applications in order to ensure secure data collection [23; 25].

Security is defined as the protection of all information and systems from any disclosure, access, modifications, or unauthorized destruction [23; 26]. Security issues are the biggest obstacle to developing digital economy. Meaning it refers to protecting information systems and controlling access to information from unauthorized access [27]. Thus, it indicates point out that information security, referred to as cybersecurity or computer security, represents important challenges for m-government and the digital economy [27].

Trust is an especially important obstacle that must be addressed when developing a strategy for m-government and the digital economy. From here it was necessary to take a set of measures to build trust between customers and organizations, by adopting advanced methods using information technology to provide services with good specifications to customers [25; 27]. Lack of online trust can hinder end users from providing personal information and accepting the success of digital transactions, thus, smart government projects must build trust between agencies, across governments, with companies, NGOs and citizens. This helps build trust and can help point out areas for larger projects [23; 26].

### **2.3.1.3 Law and Public Policy**

The utilization of ICT in the m-government and the digital economy may face legal or political barriers, so legislative bodies must guarantee that laws and regulations are efficient and updated to recognize electronic documents and transactions. In addition, it should take into account the influence of laws and public policy on policymakers who implement e-services [25]. Thus, this can be achieved through reform processes and clarification of laws and regulations to allow for electronic filing with government agencies, simplify regulations and procedures, and consult with stakeholders to assess how it can be the current laws may impede the desired results [27]. When wireless and mobile technologies provide new ways to achieve normal tasks and transactions such as mobile payment and e-commerce [27].

### **2.3.2 Organizational Challenges**

The implementation of m-government and digital economy is not a pure technical challenge only, but rather an organizational challenge. Organizational challenges include: digital divide, cultural, accountability, transparency.

#### **2.3.2.1 Digital Divide**

The digital divide defined as the gap between those who have access to the Internet and devices, such as computers, phones and mobile devices, and who do not have the ability to utilize the internet and therefore will not be capable to use e-government services [23]. Therefore, the reason could be due to a lack of internet access, income, or necessary skills [25]. The digital divide can be solved by providing computers in public places, such as shopping centers, libraries, and post offices [27]. However, new kind of digital divides have arisen, such as the internet speed and the devices specifications, and computer skills. Hence, the argument has change from the digital divide to the multiple digital divides, which are not only a global challenge, but are also local issues related to the local context in terms of availability of content, bandwidth and skills, among other issues [28].

#### **2.3.2.2 Culture**

Culture has been defined as a set of important assumptions, beliefs, and values that are shared by all members of society and thus cultural differences and individual behavior patterns play a role in the acceptance and use of new technology.

Al-Hadidi and Rizqi [15] identifies various factors of culture: education, religion, language, political philosophy, economic philosophy, and social structure. However, the cultural issue is not easily tangible, although it is not easily tangible, it must receive at least the same amount of planning for the technical change to be successfully implemented. Studies show that culture also influences the citizen's behavior's intent to adopt the digital economy and e-government services, but it must be planned more in order for the technical change to be implemented successfully [27]. Thus, cultural norms and individual patterns of behavior play an important role in how citizens and policymakers use technology [23]. Governments

must take the role of cultures into account when formulating policies and strategies [21].

### **2.3.2.3 Accountability**

Accountability is defined as the penalties and procedures by which government officials can be held accountable for their actions. Consequently, they must have the means to impose corrective measures when the government is acting in an illegal, unethical or unfair manner, in addition to the fact that citizens must have the right to know the measures that have been taken in their name [25]. Thus individual citizens should be able to obtain some redress when their rights are violated by the government or when they do not obtain the public benefits to which they are entitled [27] Accountability refers to multiple meanings, for example “Auditors discuss accountability as a financial matter, Political scholars view it as a political necessity and legal scholars as a constitutional arrangement, whereas philosophers treat accountability as a subset of ethics” [25].

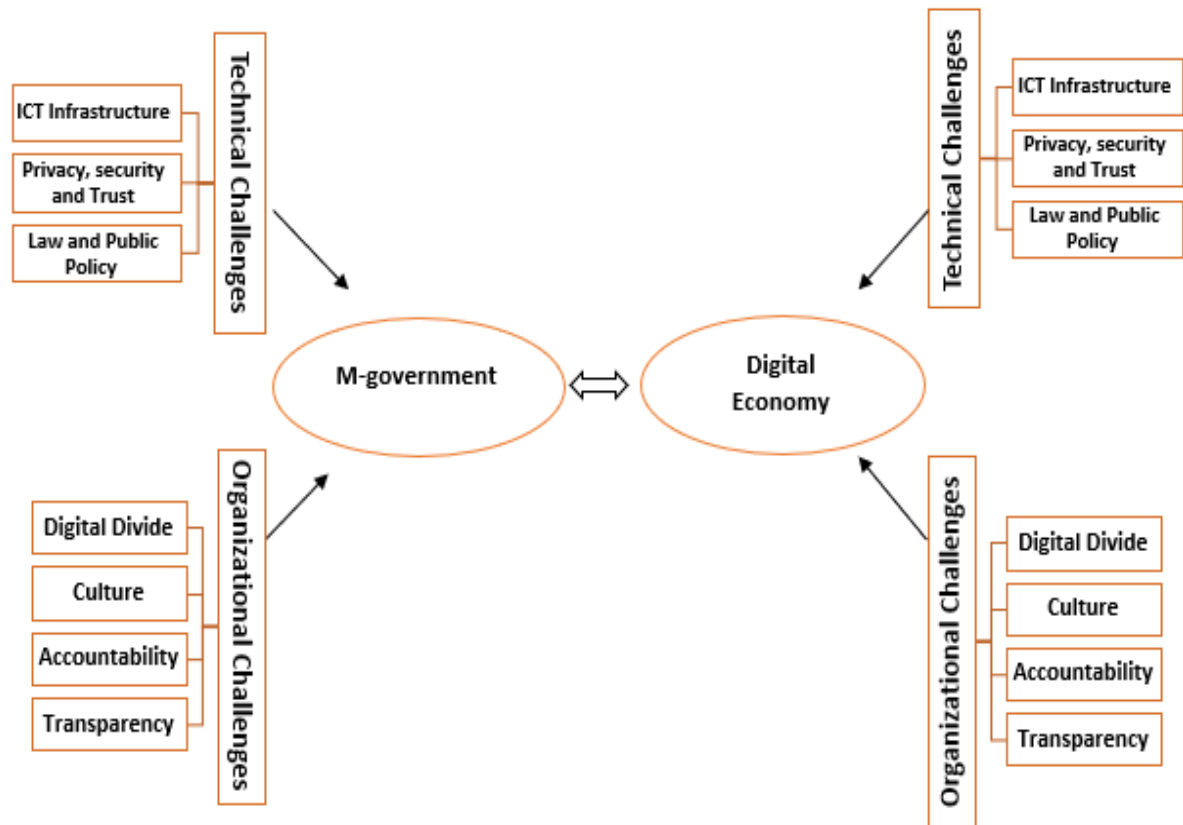
### **4.2.4 Transparency**

Transparency is an essential element that governments have used to promote openness and curb corruption. In other words, it means that the procedures and decisions taken by civil servants are open to the public, who seek accountability [27; 28]. Transparency can reduce or prevent many opportunities for corrupt behavior. The absence of transparency stops the community from actively participating in government to complaint against unfair or unwise decisions, or from asking questions. Lack of transparency can mask graft or official favoritism [15; 29]. Thus, this can be solved by publishing online rules, regulations and requirements for government services to reduce personal actions by officials such as when placing services online, give citizens the ability to track the status of their requests[30]. In addition, integrating transparency and the reform process to simplify regulations and procedures, train civil servants and provide incentives for reform [15; 30].

## **3 Theoretical Frameworks of the Relationship between M-Government and Digital Economy**

Based on the above-mentioned sections, many challenges hinder the implementation of the digital economy and m-government, such as: ICT infrastructure, privacy, security, trust, law and public policy, the digital divide, culture, accountability and transparency. These are some of the most common challenges that governments face while implementing m-government and the digital economy. The successful implementation of the digital economy also needs users who have digital literacy to go online and use the available services and who have the attitude to use these services. Even if the governments overcome the challenges





of developments m-government and the digital economy, significant problems arise with user participation. Therefore, this study attempts to answer these questions: What are the factors that affect the effectiveness of e-Government and the digital economy, and what are the relationships between these factors?

Fig 1 present the proposed model based on the above literature, also the research hypothesis was listed below.

Based on the proposed framework the Research hypothesis are:

- H1: the factors (ICT infrastructure, privacy, security, trust, law and public policy, digital divide, culture, accountability and transparency) have significant effect on digital economy development.
- H2: the factors (ICT infrastructure, privacy, security, trust, law and public policy, digital divide, culture, accountability and transparency) have significant effect on m-Government development.
- H3: there is significant relationship between digital economy and m-Government development.

Figure 1: Theoretical Model

## 4 Conclusion

Digital economy is providing the governments the opportunities to increase and worldwide business attraction and socio-economic growth. Through the quick development of ICT, such chances are forceful the local business for global race, presenting business procedures and making new revenue streams. Digital economy represents a chance to keep defeat with the technologically advanced world and take the changing plans. However, several barriers hinder the implementation of digital economy and m-government. Governments have to show a substance role to initiate and motivate the private sector to be a part in the development process of digital economy. Studies and results from the several private sectors have shown the positive impact to adopt the m-commerce in the business. Mostly small and medium business viewing the interest to adopt the digital services and business and gain from the government's digital economy plan. Maintain well strategic plan among the businesses are required to provide entry to new customers while rising sales and profits. Due to the new technologies, governments around the world have to develop e-government services to reform the economic, digital business is moving towards a rising direction in the world. The present status of the internet users, and quick development of new technologies shows that the internet user's consuming behavior is shifting to go digital transactions. The future direction of internet users and the adoption of digital services and transaction for purchasing will move up fast in coming years. The results of this study provide more accurate and comprehensive understanding of the relationship between m-government development and digital economy, also this paper offers a set of recommendations as well as suggestions for the digital economy and m-government services improvements.

One of the limitations of this research is the framework was not tested and validated using statistical data, future works may address this limitation by collecting data from local, national and international societies through wide and eclectic research. However, this research is not free from limitations, the authors believe that the method of the review of this research can be mentioned to as a valued start for further theoretical and empirical research.

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