

## **Exploring the Factors that affect E-government Implementation in Jordan over Time**

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### **Abstract:**

The Information and Communication Technology (ICT), especially the Internet, revolution has dramatically changed how citizens can interact with their government. E-government, that is utilising ICT to change and/or improve the relationship between government, citizens, businesses and other government entities (World Bank 2007), has become a popular focus of government efforts in many developed and developing countries. Jordan is one such developing country that has embarked on an e-government initiative. Progress to-date comprises the provision of a few key services for citizens and the interconnection of a subset of government departments.

Existing empirical research on e-government has been undertaken principally within western developed countries. Of those studies that have focused on e-government implementation within developing countries, a few have identified one or more factors that play a part in the progress or otherwise of an e-government capability. Whilst useful as a combined list of possible factors to bear in mind, these studies have been based on "one-off" snapshot analyses of the situations found within the countries being studied. There is no indication as to whether the existence and predominance of such factors vary over time, and the nature of that variation.

This paper presents some preliminary results of one and half year investigation to explore the factors that effect E-government implementation within Jordan. It starts with a brief overview of e-government in general, and provides some background information on Jordan in general and the ICT sector within Jordan in particular. Data from the first two cycles of fieldwork which were completed by the author are presented, the analysis of which was based upon Strauss & Corbin's variant of the Grounded Theory method (Strauss & Corbin, 1990). Even from these preliminary results, it is clear that there are differing levels of dynamism and characteristics that the factors identified as effecting the e-government implementation within Jordan possess. The value of this paper lies in the fact that it is one of only a handful of papers that focus on issues affecting e-government implementation specifically in Jordan. Furthermore, it uniquely views the influencing factors from a dynamic rather than static perspective.

### **Keywords:**

Jordan, e-government, dynamic factors, developing countries

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**1. E-government: An Overview**

There is no one universally accepted definition of E-government, as Table 1 illustrates with a sample of definitions found within key e-government/Information Systems (IS) texts. Common to most of these definitions is the notion that ICT is a tool to enable governments to implement e-government services. Differences, in terms of emphasis, are found within the definitions. For instance, Cook et al. (2002) emphasizes the support of principal relationships that exist between government and its key stakeholders, whereas Bhatnagar (2002) reflects his developing country research background within his definition, by mentioning explicitly several benefits of implementing e-government that have been identified within developing countries, such as the reduction of corruption, the strengthening of accountability, and the increase in government procedure transparency. This research adopts a broad definition of e-government, as provided by the World Bank (2019), that is utilising ICT to change and/or improve the relationship between government, citizens, businesses and other government entities.

Developments in Information and Communication Technologies (ICTs), especially the Internet, has made e-government technically feasible, and already the provision of e-government services in several countries has resulted in significant effects on how citizens interact with their respective government (Dodd, 2000; Altamony et al., 2012; Yassien & Mufleh, 2017), including many benefits. However, in order to realise the potential benefits of e-government, countries face many barriers that hamper the progress of e-government projects. For instance, Choudrie et al. (2005 & 2017) found the lack of infrastructure to be a major barrier to the implementation of e-government in rural areas of the UK. As e-government requires security solutions and applications to be implemented for resolving security and trust issues, the high cost of these solutions was considered a financial barrier (Karajeh & Maqableh, 2014; Khwaldeh et al., 2017; Rosenbaum et al., 2018; Twizeyimana et al., 2018). According to Lam (2005), the absence of e-government programme leadership is a barrier to the programme’s successful implementation.

Table 1. E-government definitions

Author	Definition
Cook et al (2002)	E-government has four dimensions in relation to major functions and activities of governments: e-services (delivery of government information electronically), e-management (using of ICTs to improve management and communication within and outside government structures), e-democracy (use of ICTs to enhance citizen participation in democratic activities), and e-commerce (online transaction of goods and services).
World Bank (2019)	Utilising ICT for changing and improving the relationship between government, citizens, businesses and other government entities.
Bhatnagar (2002)	Sharing and delivering services to citizens and businesses for the purpose of reducing corruption, strengthening accountability, reducing time and cost, and increasing transparency.

E-government services have been available within several developed countries for sometime, for example within the UK (Faulkner et al., 2019) and Canada (Amira & Soumeya, 2019). More recently, developing countries have embarked on e-services (Tarhini et al., 2015, 2017a, b), specifically e-government implementations (Alenezi et al., 2015, 2017; Kanaan & Masa'deh, 2018),

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for example Dubai (The E-government Handbook for Developing Countries, 2002) and Jordan - the environment within which the current research is focused. Given the longer involvement with e-government implementation, however, it is not surprising that the majority of the existing e-government research is based on western developed countries.

The existing literature in the e-government subject domain presents a strong argument for considering the dynamic nature of e-government influences (as seen in Choudrie et al. (2005 & 2017), rather than simply examining these influences from a one-off, "snapshot" perspective. Coupled with the aforementioned paucity of available literature on developing country experiences with e-government (a few articles have been published on e-government within developing countries, focusing principally on the negative influences and challenges that need to be faced before e-government can become a successful reality (Atallah, 2001; Heeks, 2002; Reffat 2003; Wagner et al. 2003; Ndou, 2004), and the relative accessibility of the Jordanian case (the lead researcher being a Jordanian national), it seemed highly appropriate and interesting for this research work to study the factors that influence e-government implementation within Jordan over time. The remainder of this paper is principally about the outcomes of this research work, based on two cycles (i.e., periods) of fieldwork conducted at 6 monthly intervals. However, before the research methodology and outcomes are presented, some background information on Jordan and its strategy with regard to ICT and e-government is needed to contextualise the empirical research. This forms the subject of the next section of this paper.

### **2. Research Method**

As stated at the end of Section 2, the objective of this research was to study the factors that influence e-government implementation within Jordan over time. A rich understanding of the factors and their effects was sought, and therefore a qualitative research method was inevitable. A semi-structured individual interview was employed as the principal data collection mechanism for this research, with the objective of gathering information about the e-government programme and its influencing factors from the perspectives as many of the key stakeholder roles within the programme as feasible. Stakeholder roles identified for the first and second fieldwork cycles comprised the ministry officials were directly involved in the e-government project (i.e., the Director of E-government in the MOICT, who has an average of 9 years project experience of e-government, and the Head of Change Management also from the MOICT), other ministry officials who would be representatives of the internally end users of e-government (i.e., two senior managers from the Ministry of Labor and the Central Bank (Ministry of Finance) as top management representatives, a middle manager representative from the Audit Bureau, and one lower level management staff representative from the Loans and Grants section within the Ministry of Planning), citizens who would be representatives of the external end users of e-government, and a representative manager from a private sector Jordanian organisation that is contracted to help the e-government implementation (i.e., a project manager from the Specialized Technical Services company which is a principal supplier for e-government project). In the first cycle, a structured individual interview (essentially a questionnaire) with closed questions was employed with an eventual total of 130 citizens the majority of which are randomly selected from Irbid city, the second city of Jordan, to gain a community view on relevant aspects of e-government. The goal was to get a broad brush feel of their views of the e-government programme and the factors that they believed were making them more or less inclined to use the

services it currently provided. However, this resulted in very limited insight into the factors and their effects, and the approach was changed within the second cycle of fieldwork to semi-structured individual interviews with nine Jordanian citizens. Nine were considered an appropriate sample size, on the basis that nine interviews were manageable in addition to the fact that data saturation, according to Yin (1994), is typically reached when the number of interviews reaches eight. Each interview was to be first transcribed from tape to paper in Arabic, to be subsequently translated into English.

Grounded theory (Straus & Corbin (1990) variant) was used to analyse the transcripts. The data analysis therefore consisted of analysing texts, developing themes, and finally stating the meaning of the findings (Strauss & Corbin, 1990; Creswell, 2005), using the detailed coding methods described by Strauss & Corbin (1990). Essentially, Grounded Theory analysis involves three coding stages;

- Open coding involves the breaking down of data into discrete parts. Open codes are then attached to a small segment (e.g., a sentence, a short paragraph or even a word) of the participant's interviews, the name of which reflects the meaning of the segment. Segments with similar meanings (even if differently worded) are given the same open code label. Eventually, a list of open codes is created.
- Axial coding starts shortly after open coding, and involves looking for concepts and developing categories. Here, the data is essentially put back together again, in an attempt to give a higher level explanation to that data. The list of open codes are essentially grouped together where some relationship between them is found to exist, and it is from these groupings that possibly several categories emerge.
- Selective coding is the stage where the main story of the study under investigation is presented either in the form of diagram's or narrative or both. Strauss and Corbin (1990) defined selective coding as the process of integrating and refining the theory through determining the core category. The core category is a category that pulled all categories together and was centrally relevant to the theory.

As this paper is covering the first two cycles of the planned fieldwork, it is too early to be considering core categories and therefore only open and axial coding is available at this moment in time (Strauss & Corbin, 1990). The next section details the results of open and axial coding on the data collected within the first and second cycles of empirical investigation.

### **3. Results**

After analysing the data, three principal categories were identified as barriers to e-government implementation in Jordan, these being; financial, human and cultural (see Table 2). Discussion on these categories is provided in the following subsections.

Table 2. Categories that have emerged during coding procedures

<b>Categories</b>	<b>Concepts</b>
Financial	Funding issues
	Salaries
	Cost of the internet
Human	Lack of understanding
	Lack of IT qualified employees
Cultural	Fear of and resistance to change
	Wasta

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	Corruption
	Internet penetration

### 3.1. Financial Barriers

A crucial factor in e-government implementation in Jordan is related to financial issues. The following subsections discuss the concepts that constitute this category which includes the concerns about the financial problems that hamper the e-government implementation.

#### Funding Issues

The majority of interviewees emphasized that the e-government project is a “big project” and that the government cannot afford to implement such a project without external funding. They also asserted that e-government needs a separate budget managed by a separate committee, as one senior manager stated:

“It is necessary that there should be a committee for managing the program and it must be completely independent and has its own budget; otherwise things will remain slow.”

Some of the e-government budget has been used for other initiatives such as providing a laptop or iPad for every university student in Jordan to increase general ICT awareness among Jordanian students, but there is no guarantee that this awareness will increase because students may sell these devices to cover their university expenses. This situation could slow down the implementation of the e-government.

#### Salaries Issue

The problem of a low rate of pay within the public sector in Jordan was considered a substantial barrier. Attracting skilled people is very hard because of the intense competition with the private sector in Jordan. Furthermore, the lack of quality public sector employees is not helped by the inflexible regulations regarding the payment of all staff with the ministries and government departments, which is based on salary scales which do not distinguish employees in terms of their skills.

Two senior managers complained about the turnover of IT staff within the MOICT. Most of them intended to work outside the country or in the private sector in Jordan. They obtain salaries three times more than they get in Gulf countries.

Most of the interviewees preferred to spend their money to improve their life rather than being disbursed to information technology such as buying computers or subscribing to the Internet.

#### Cost of the Internet

Most of the participants referred to how expensive the Internet is. The government does not have any control over the cost of the Internet because of the domination of the private sector on the Internet services in Jordan. This leads to citizens not going online and consequently not benefiting from e-services.

Even though the cost has been reduced, 7.6 million Jordanian citizens – most of the population – use mobile phones instead of land line phones. This is in itself a barrier to the use of the Internet because subscribing to the Internet in Jordan requires a landline to be connected and few services are provided via smartphones (MOICT, 2017).

The problem of the cost of using the Internet mentioned persistently throughout the interviews. This factor is classified as a short-term barrier because interviewees felt it was possible for the government to start providing the Internet at an acceptable price, and forcing private Internet providers to reduce their charges, in order to allow more citizens to connect with the Internet.

### **3.2. Human Barriers**

Based on the interviewee's perspectives, human capabilities in terms of their understanding of the concept of e-government and the skills that they need for such a project, have been recognised as barriers to implementing e-government within government departments, as described below.

#### **Lack of Understanding**

The majority of the interviewees mentioned that some government employees are unaware of the meaning of e-government. One interviewee asserted that:

"Government employees think that the e-government is a mere technology and placing computers in offices. I myself state that it is administration more than technology. Some employees also think that e-government is a development of the IT department".

The presence of different conceptions on e-government meaning among involved employees has a negative effect on their government departments, so they might deal with the project as a computerisation process rather than tackling the true nature of e-government, and fully understanding the requirements of the programme so to be successfully implemented in a short space of time.

One of the e-government team declared that some employees from low administrative levels think that they will lose their jobs when the programme is implemented. He stated that:

"When we go to the ministries to collect data from them and analysing functions, some officers are saying: where will we be when e-government is applied in our ministries?"

Overall, throughout the interviews, elements such as the lack of consensus on the concept of e-government have been mentioned as reasons for the low level of awareness amongst employees across different levels. This factor was present throughout the first two cycles of investigation.

#### **Lack of IT Qualified Employees**

As the interviews carried out in Jordan show, this is a recognised impediment to e-government services within government departments in Jordan.

One IT expert directly involved with the e-government program said that the lack of IT experts in governmental departments is seen as a major barrier to the implementation of the program, and cause delays in the program until technologically qualified personnel are secured:

"We are surprised at the complete lack of IT experts in the government departments. We are working to provide them with necessary equipment and restructure government departments. We can't work without the assistance of the officers from within the departments themselves.

IT qualified people in Jordan prefer to work in the private sector, where they are trained and sent on advanced courses; options which are not available within the public sector. This is due to a lack of financial resources and the inflexibility of internal ministry regulations that do not allow ministers to send officers abroad for courses in order to become more qualified.

In addition, it is very difficult to keep a qualified people because of the high competition from the private sector. A director of teamwork in the e-government program said:

"Despite the availability of technology experts in the program, we are suffering from their moving into the private sector. The cause behind this is the insufficient salaries we pay them".

### 3.3. Cultural Barriers

This category addresses the cultural concepts that impede the implementation process of e-government in Jordan, such as resistance to change, corruption, Wasta, and citizen's attitude towards using ICT services.

#### **Fear of and Resistance to Change**

According to Bridges (1991) "changes is not the same as transition. Change is situational: the new site, the new boss, the new roles, and the new policy...unless transition occurs, change will not work".

As e-government is a transition process from traditional methods of work into electronic ones, a major change in the way the government work, consequently resistance to this change may occur. Some of the employees are afraid of losing their jobs or privileges when the program is implemented. While others consider e-government as a radical change in the public sector structure, and are consequently afraid of finding themselves obliged to learn new skills, especially IT and English language (in fact they do not need to learn a new language as the e-government interface is presented in the native Arabic language).

One type of resistance, practiced by some employees, is the non-cooperation with the e-government team. One senior manager in the e-government department mentioned:

"Employees do not cooperate with us because they think that we will replace them with computers and, consequently, they resist change from now."

According to the interviewees' perceptions, there are many reasons which give them the right to resist the change to e-government. In brief, resistance to change emerges from the fear of losing privileges or jobs. Ambira et al., (2019) and Bhatnagar (2002) consider resistance to change as the biggest challenge to e-government implementation. , which needs much effort to overcome.

#### **"Wasta"**

"Wasta is a social, widely acknowledged custom in which a person attempts to help someone else to get a certain right or service" (Minister of Justice, Alghad newspaper 2016). Wasta is a widespread phenomenon preferred and accepted among Jordanian people.

In the e-government programme Wasta may play a role in hindering the project or causing it to fail, because it could lead to the appointment of unqualified people in different places at the expense of qualified experts. Citizens agreed that if the e-government project is completed, they will not need Wasta in order to transact their business with government departments, as one interviewee explained.

"As a Jordanian citizen you must use Wasta so as to achieve things rapidly without delay. The law does not work, and only wasta applies in government departments. If the e-government is implemented I think you do not need Wasta to do your transaction."

Wasta has a negative influence on the government's performance and leads to other factors to occur like corruption which will be discussed in the next paragraph.

#### **Corruption**

Administrative corruption is recognised as one of the fundamental problems in Jordan. The former Minister of Justice and Chief of the Anti-Corruption Corporation, Abed al-Shakhanbah said (Alghad newspaper 21 Jan 2016):

“Administrative Corruption is considered one of the foremost challenges facing Jordan. Because of the absence of legal provisions that lead to processes that can’t be described as anything but corrupt”.

Corruption in Jordan is a result of failing legislation and administrative complications, and it takes several forms including bribery, obtaining private benefit from jobs, and misusing authority and power.

For e-government, corruption is considered to be a major barrier, especially in the field of tenders where some contracts are given on the basis of who has the greatest national power and influence. For instance, computers bought for the government departments and projects have frequently been below accepted standards, due to the corruption.

In addition, unqualified people may assign to work on the programme as a result of corruption. An interviewee said that:

“For example, an IT department employee with a mediocre university qualification was hired two years ago when a person with excellent grade was among the candidates. Such a person will never cooperate with the e-government team because he is basically unqualified”.

From the citizens’ perspectives, one of the advantages expected from the e-government programme is an attack on corruption. They emphasised that hiring anyone through Wasta should be considered corruption. As one of them said:

“I think that Wasta is the basis of corruption in Jordan; it exists in all governmental departments, where no governmental transaction can be done or any job applied for without Wasta.”

In brief, corruption in Jordan impedes e-government implementation. One of the advantages which citizens look for in, and expect from, e-government is that it makes processes more transparent and procedures substantially less open to corruption.

#### **Internet Penetration**

The interviewees believed that the Internet subscription price is an obstacle to the propagation and use of e-government services. These views confirm the results of a field survey carried out by the Ministry of Communication and Information Technologies in Jordan (MOICT, 2017), which found that 64 per cent of Jordanian families do not have computers due to the high cost of subscription, and that only 16 per cent of households are online. In the present research, interviewees unanimously stated that such costs would be too great a proportion of their salaries. As one interviewee said:

“I can’t pay 30-40 Jordanian Dinars per month to subscribe with the Internet (ADSL or Fiber). I prefer to go to government departments instead of paying 40 Dinars monthly to complete my transactions.”

As a result of the low level of internet penetration, most of the citizens preferred Short Message Services (SMS) via mobile phones for receiving e-government services; this will negatively affect the penetration of the services since most of the services will be offered over the Internet. Some citizens add that land-lines are not available in distant areas, which constitutes an additional hurdle for the uptake of e-government services.

#### **4. Conclusion and Future Research**

This paper began with the discussion of e-government implementation in general and in developing countries in particular. Some benefits and barriers found in the existing literature were identified. An argument to examine factors that affect e-government implementation process in Jordan over time was presented and justified. Then the paper focused on the Grounded Theory

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interpretation of two cycles of primary data collection undertaken by the authors, which sheds light on barriers that have affected, and may continue to affect, the e-government implementation in Jordan; these have been categorised as financial, human or cultural barriers. Some barriers, such as internet penetration, corruption, resistance to change, lack of understanding, and the cost of the internet, are not confined to the e-government within Jordan. They have already been identified in previous studies of e-government in both developing and developed countries (Heeks, 2003; Choudrie et al. 2017). However, two of the identified barriers have not been mentioned in any of the existing e-government in developing countries' literature; namely, Wasta and Salaries. Jordan must aim to minimise Wasta which needs strong political support over a long period of time. It also needs legislation to make Wasta unlawful. Existing salaries hamper the fully engagement of citizens with e-government. The government should increase salaries so employees and citizens can afford the cost of subscribing with the Internet, and make employees less motivated to seek private sector/overseas employments.

Over the two cycles of data collection, several factors were identified, some of which persisted across the two cycles of investigation and others which did not. One reason for this could be that the factor was present in both cycles, but was not within the mindset of the interviewees within one cycle but was within their mindset in the other cycle. The presence of Wasta in the second cycle only might be explained by this shifting of mindset. Alternatively, it may be that Wasta only became important to consider within the time period between the first and second cycles of empirical research. Either way, the value of a longitudinal study such as this is demonstrated, as to do a one-off investigation would be insufficient to identify all factors and to understand their temporal nature.

In the present study interviews was conducted with the number of unique people in Jordan. Future research is now needed to engage more citizens and employees who may uncover further factors affecting the implementation process of e-government in Jordan and to understand their temporal nature. At least one further cycle of investigation is planned in the short term, and core categories will be identified. The development of model of the factors and their dynamic nature will be derived, which may provide useful information to e-government initiatives in other Arabic developing countries.

The authors recognise that the research has some limitations. For instance, the translation of the interviews from Arabic into English was a very big challenge, as Arabic words and expressions do not always have an English equivalent. Although rectified for the second cycle, the first cycle of citizen enquiry was not as effective as it could have been. Interviews were conducted in a professional, ethical manner, but it is recognised that the interview situation itself may influence, explicitly or implicitly, the respondent's answers. Overall, the authors believe that these possible limitations do not significantly affect the essence of the results as presented in this paper.

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