An Exploratory Study on the Factors Affecting the Development of E-Government Services in Libya: A Study of Government Perspectives

Amer Salem Ali Salem, Assoc. Prof. Dr. Md. Nor Hayati Bin Tahir

Ph.D, Student at Universiti Teknikal Malaysia Melaka (UTeM), Faculty of Technology Management and Technopreneurship.

Dean of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka (UTeM).

Abstract: Today’s, electronic applications have brought the different advantages for accessing and sharing information over online services and other wireless applications. Libya is a huge country with different states, which located in different places. The using of Internet services in the Libyan rural community brought the usefulness to different areas in a certain needs. Hence, it is propose to measure the effectiveness of e-government application in providing knowledge and information sharing over these states. Additionally, this research will carry out the importance of providing such services for these areas.

Key words: e-government, systems effectiveness, electronic applications, online services.

INTRODUCTION

The advent of electronic government (e-government) provides transforming opportunity for government services to organizations and their citizens. This transformation in public services is facilitated by the integration of information technology (IT) infrastructure. The use of information technology (IT) infrastructure for public services has positively affected the relationship between individuals and the societies through the use of internet-base facility for must transaction. Public service rendered through the internet allows citizens and organizations to overcome many technical barriers hindering fluent flow communication and government services to citizens by facilitating the inclusion of detailed information system that are provided at increase frequency that decreases printing and service cost at users convenient (Chango, 2007; Pina et al., 2007b). The adoption of e-government in Libya is among the fast growing internet-base activities the government uses to improve public services and has been witnessed in most developing countries in recent years (Alcaide et al., 2007; Nour et al., 2008).

Problem Statement:

The adoption e-governments practices facilitate technological developments and digitalization allows easier production, transmission and exchange of information in real time and has been influence by numerous factors such as inadequate infrastructure, lack of reliable network, poor information and system quality and lack of awareness of the appropriate service websites (Hamdy, 2007; Ibrahim et al, 2010; Educational Institution in Libya 2012). Study in Libya found that adoption of e-services in Libya has been influenced by lack access to internet services, unreliability of web information, and unforeseen plans of Libyan government sectors and has been attributed to poor information and system quality (Libyan Times, 2010; Maumbe et al. 2008; Schuppan, 2009).

While Libyan government moderates and controls the use of the information technology (IT) infrastructure major Internet Service Providers (ISP) in Libya such as AlFalak, Bayt Al Shams, Libya Telecom and Technology and Modern World Telecom are left without modern IT facilities (Libya Telecom and Technology, 2007; Siau, & Long, 2006). Lack of tecommunication facilities left libyans with little or no awareness on the effectiveness of e-government services (Hunaiti, 2009; Gebremichael, & Jackson, 2006). Currently public services in Libya lack effective information and services system due to lack of efficient communication infrastructure and limited access to Internet. The use of efficient information and communication systems improves the effectiveness, transparency and accountability of government and stands as an essential innovation tool for transforming government services with their various constituencies (Pina et. al., 2007; Heeks&Bailur, 2007).

However, deficiencies in providing e-government services to users in Libya is constrained by lack of awareness as most users know little about the available services and the organizations that provides the services. In other to solve this problem in different e-government services organizations, need arises to provide system that guide users through to identifying specific available services that are rendered in Libya and the services providers responsible to accomplish different service task are discussed in the present study.

Corresponding Author: Amer Salem Ali Salem, Ph.D, Student at Universiti Teknikal Malaysia Melaka (UTeM), Faculty of Technology Management and Technopreneurship.
In Libya, government organizations exist on several across various fields of competences. As a result, administrative services are distributed over different public institutions and amount to variation which applies to all institutions including businesses. Therefore change of address and personal information potentially conflicts services rendered by public services such as bank, insurance, education, employer and many others (Heeks&Bailur, 2007). To solve this problem in Libya involves different administrative processes at different public institutions requiring specific application and enclose of various documents.

Office working hours of most organizations in Libya complicate and results to delay the processing of various documents. The emergence of these problems makes it important to adopt electronically based system such as e-government with the potential to coordinate various activities and operations at different location using faster and more convenient information technology facilitated infrastructure. Therefore, government public service could be termed “incomplete” if electronically base services are not in use because of usually delays, different official handling process and consequently result to complicated processes that consumes much time consuming and are expensive yet, the citizens are always not satisfied with the services in Libya. Libyan public services are synonymous with poor telecommunication infrastructure as most cities are left without power supply and information technology facilities (Libya Telecom and Technology, 2007).

Objectives of the Research:
The objectives of this study are as follows:
1. To determine factors affecting the development of e-government services in Libyan.
2. To investigate the level of online sophistication base on the use of improved IT infrastructure for e-government services across various service channels.
3. To determine the characteristics of e-government services in Libya and to rank levels of sartorial advances base on the quality of service system towards the adoption of e-government in various sectors.
4. To determine the effectiveness and efficiency facilities used for interaction during e-government transaction with the public.
5. To investigate e-government adoption functionalities and their impact in Libyan economy and the reliability of e-services to citizens.

Research Methdology:
a) Research Instrument and the Theoretical Model:
The theoretical model shown in Figure 1 was used to specify sets of factors for effective adoption of e-Government practices in the sectors. The TAM was used to mediate online services of e-Government. dispersion of e-Government services, ICT infrastructures and the perceived usefulness of the e-Government comprises the factors that will be used to evaluate e-Government adoption in the health, education and power sectors of Libya.

![Fig. 1: Theoretical Model.](image)

b) Analysis of the Theoretical Model:
The theoretical model of e-Government adoption in Libya health, education and power sectors were used to explain the present situation of e-Government adoption in the sectors. A study by Heeks (2007) reviewed a theoretical framework for understanding government perspectives on causes and impacts of e-government adoption in the public sectors and found that ICT infrastructures are determinants of effective e-Government services. The study concluded that IT availability determines the potential impacts of adopting a particular technology. TAM on the other hand considers the choice of a technology within social structures as was found to be an important determinant of to the use of IT for e-Government adoption. The theoretical frameworks offer insight and understand on different positions of IT to government services and supported the present study.

Coursey and Norris (2008) present a summary description of Stages model that was used to evaluate e-Government and found that e-Government adoption evolves in several stages that reflect changes in its development and can be used to measure its progress that delineate specific transformation (West, 2004; Santos and Heeks 2003). The models predicted that e-Government can move beyond information provision and interaction for various transactions but can fundamentally transform the service relationship of governments to
major sector. The models become normative when they describe fully developed e-Governments and implicitly asserts that fully transactional e-Government systems are better and improves services. In the same hand, dispersion of e-Government in the present study has shown to be an essential factor of an effective e-Government services in the sectors.

Table 1.2: Analysis of variance (ANOVA) of the theoretical model of e-Government adoption in the health sector.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>734.798</td>
<td>3</td>
<td>244.933</td>
<td>1.354E5</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.002</td>
<td>1</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>734.800</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: e-Government adoption

Table 1.3: Analysis of variance (ANOVA) of the theoretical model of e-Government adoption in the education sector.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>169.822</td>
<td>3</td>
<td>56.607</td>
<td>318.216</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>.178</td>
<td>1</td>
<td>.178</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>170.000</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dependent Variable: e-Government adoption

Table 1.4: Analysis of variance (ANOVA) of the theoretical model of e-Government adoption in the power sector.

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>4834.160</td>
<td>3</td>
<td>1611.387</td>
<td>530.074</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>3.040</td>
<td>1</td>
<td>3.040</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4837.200</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Dependent Variable: e-Government adoption

C) Research Methods:

Three research methods have been used in this study. The first method of research is Data Collection. The data collection starts by sending letters to the respective managers in various organizations and government setting that uses e-Government services. The letter describes the need to perform the survey. The managers will be reminded of the need to motivate their workers to participate in the survey and will serve as follow-up messages. A total of 750 questionnaires will be distributed to e-Government users.

The second method involved is a Pilot Study. A total of fifty (50) survey questionnaires is tested among e-Government users in Libya. The pilot study will be carried out prior to real data collection in order to check for consistency of the survey instrument to supply quantitative information for the analysis. The pilot study will be conducted among Libyan workers in the health, education and power sectors. Data collected will be analyzed and used to validate the questions prior to post data collection. The results obtained from the pilot study will not lead to any substantive changes; however it will be used to test the feasibility of the survey instrument.

And lastly, the third research method is Data Analysis. Samples collected using Likert-type scales will be analyzed descriptively and statistically were used to test the research hypothesis and answer the research questions in the present study. The analyses included the descriptive statistics using means and standard deviations on demographics. Correlation analysis will be carried out to examine the factors that constrain the adoption of e-Government practices in Libya. Finally, the reliability statistics will be conducted on the survey samples in order to measure the consistency and reliability of the item that are used.

RESULT AND DISCUSSION

c) Introduction:

The result of the data obtained from the health sector, education and power sector in Libyan to explore the factors affecting the development of e-Government is reported and discussed in this chapter. Data analysis and interpretation reported in this chapter involves critical examination of data collected using survey questionnaires in the health, education and power sector in Libya.

d) Gender:

Composition of the analyzed data by gender is presented here in Figure 2. It compares the composition of the analyzed data by gender in the health, education and power sector. In the health sector, 135 respondents were male while 115 are female. In the education sector, 150 of the respondents were male while 100 are female while in the power sector 195 of the respondents are male and 55 are female.
C) Age:
Age of the respondents as reported in this section entails their date of birth till the date of interview as reference date in years. In the health sector, it then implies that most workers are university graduate in the health sector since enrolment into university start at 23 years in Libya.

It is concluded that the worker comprises of graduated from the university because enrolment into university start at 23 years in Libya. Worker between the age 41 to 50 years ranked second in the number of workers in the sectors with ore workers in the power and health sector (70 respondents) and lastly the education sector (67 respondents).

e) Work experience:
Work experience entails the number years respondent have used at work in various sectors where. The range of years of work experience of the respondents that provided information on e-Government services in various sectors that were analyzed in this study is sufficient and revealed the progress in various sectors.

Conclusion:
This study explores the factors affecting the adoption of e-Government services in the health, education and power sectors in Libya. Specifically, the study examined the progress in e-Government development in the sectors, ICT skills, the level of online sophistication based on information, interaction, two-way interaction,
transaction and the level of integration of e-Government services based on dispersion of services, coordination of services and processes, and the integration of services and processes in the health, education and power sectors.

REFERENCES


