

Using Focus Group Method to Identify Citizen Requirements to Saudi Mobile Government Services

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Abstract—Mobile government services implementation faces several challenges in developing countries. This paper studies some of those challenges in the context of Saudi Arabia. The study aims to investigate factors affecting m-government acceptance in Saudi Arabia, including ease of use, usefulness, service quality, trust, intention to use and users' satisfaction. Our investigation will help in integrating the m-government services in citizens' everyday life. We collected and analyzed our data from focus groups. These focus groups are from King Saud University and Imam Muhammed Bin Saud University, so the samples size are five and seven participants, respectively. We found that there are some factors to identifying citizen requirements to Saudi mobile government services. These services should be easy to use and not require too much effort. Also, these services must be fully trusted.

Keywords—E-government, M-government, focus group, Saudi mobile government services.

I. INTRODUCTION

WITH the continuous development of ICT and other new technologies, it is beneficial to exploit different tasks related to everyday life, especially when requesting services from the government. M-government research has emerged with the aim of improving the quality of government services provided to citizens [12]. M-government normally refers to the involvement of mobile devices by government institutions when providing their services to citizens [12]. Several types of m-government are identified, including government-to-government, government-to-business, government-to-citizens, and government-to-employees [10]. Mobile technology is affecting not only private enterprises, but also the way how governments are providing their services to the public [11]. Government services are currently being actively transitioned from e-government (online) to m-government (mobile). In Saudi Arabia, the rate of spread of mobile networks, as well as mobile devices, continues to increase [9]. Therefore, the exploitation of such technologies by the government to deliver its services will have an impact on the development of the country in general. At present, the Saudi government has scheduled extensive plans to implement m-government [4].

M-government aims mainly at improving the service delivery by exploiting new mobile technologies. However, a successful implementation of m-government is related to a set of pre-conditions, such as availability of technical resources

(computers, mobile devices, etc.) and public awareness about m-government benefits. These pre-conditions are not always fulfilled automatically, especially in developing countries, which affects the rate of citizens adopting the services. The focus of the current study is on Saudi Arabia as one of the developing countries where m-government is still in its early stages, and also where there is great interest by the government in it. Our work aims to study and explore factors that lead to a successful implementation of m-government, as well as to identify obstacles and barriers facing m-government in the Kingdom specifically.

According to official statistics in Saudi Arabia [6], the number of subscriptions for mobile communication has reached approximately 53 million subscribers, with the majority of subscriptions (84%) consisting of prepaid services. From another side, the rate of mobile communication services (service subscribed per person) has dropped approximately to 167.5% from 170%, parallel to the population growth and stability of the total number of subscriptions. On the other side, the Internet penetration rate in Saudi Arabia has dramatically increased over the past years to approximately 68.5% by the end of 2015, up from 41% in 2010 [5]. Hence, the estimated number of Internet users in Saudi Arabia is currently about 21.6 million users. Moreover, there is recently an increasing demand for Internet and broadband services, with the increased use and connection to social networking channels, the use of content-on-demand channels (e.g. YouTube), in addition to online games. Hence, subscribers are usually looking for higher speeds and larger download capacity, which has increased the amount of data used in the past few years.

The current paper aims to highlight the status of m-government in the Kingdom, mainly by studying some factors such as ease of use, usefulness, service quality, trust, intention to use m-government services and users' satisfaction and that affect the actual use of m-government services.

We found that many factors are affecting Saudi citizen adoption of m-government services, specifically including trust, satisfaction, as well as ease of use, usefulness and mobility. We recorded several suggestions from the participants:

- 1) M-government technical infrastructure should be fully implemented in order to establish links between organizations
- 2) Using incentives for promoting the use of m-government services by the public and cooperate with the private sector for the management of m-government application, in order to ensure the quality of provided services.

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In the next section, relevant prior work will be presented. After that, we will use focus group method to identify citizen's requirements. Finally, conclusions and limitations are given in the last section.

II. PRIOR WORK

Factors leading to successful implementation of m-government have been the subjects of many studies [1]-[3], [8], [13].

In Malaysia, users' needs from m-government services were studied by Thunibat et al. [13]. The main problems mentioned by users were related to cost, service quality and security. When studying these factors in Jordan [2], it was revealed that public awareness, trust, infrastructural constraints, cost and the lack of an enabling legal framework were the main factors affecting the implementation of m-government. In another study conducted by El-Kiki and Lawrence [8], a survey was performed regarding expert's opinions relating to the obstacles of m-government, and suggestions about how to face these obstacles. Hence, three key areas of suggestions were mentioned by experts: organizational, technical and social. The numerous identified obstacles included economic, financial and legal issues, reliability, transparency, awareness, privacy, security, and trust.

Success factors for interactive m-government were studied by Al-Khamayseh and Lawrence [3]. This study included a survey of experts based on stratified purposive sampling. The main factors identified by the experts were security/privacy, user needs and preferences, quality and user friendly applications, cost, high mobile penetration, IT literacy, legal issues, etc. Other factors were identified in the study made by Sandy and McMillan [7] who reviewed the existing literature about m-government. The main factors found included: cost, education, and security.

A study conducted by Reddick [2] came to a realization that citizen characteristics affecting their interaction with e-government in the US, as the focus of the study. In his study, social demographic attributes (gender, education, age, social class and pay) were the rather more important factors explaining citizen awareness and acceptance of electronic government services.

Schaupp and Carter [4] used a model from Carter and Belanger's in 2005 to assess junior voter's willingness and acceptance to adopt the concept of online voting systems in the US. As a result, the study results showed that supposed practicality, compatibility and trust were important predictors of the public's intention to use e-voting system, whereas user-friendliness, image and relative advantage were not substantial elements.

III. USING FOCUS GROUP METHOD TO IDENTIFY CITIZEN REQUIREMENTS

A. Data Collection

Two different size sets, of five and seven participants, with varying expertise were recruited. Five participants in the first set were selected from King Saud University, with various

ages and levels of expertise (see Table I). The recorded interviews for these participants were of 45 minutes duration. For the second set, seven participants from the Imam Mohammed bin Saud University were recruited, also with different ages and levels of expertise (see Table II). The duration of interviews in this second set was 41 minutes.

B. Data Interpretation

After performing data categorization and storing, data interpretation was performed in order to identify a list of the main points as well as related findings. Additionally, NVIVO package Version 11 was used for analyzing the interview transcripts, so that the descriptive themes of the focus group can be identified. The identified three themes of the focus groups in our study, listed below, are discussed in the following section:

- Understanding m-government,
- Factors affected the citizen's adoption,
- Suggestions.

IV. UNDERSTANDING M-GOVERNMENT

As m-government services are new to many of the Saudi population, participants were asked about their understanding of these services. The obtained answers were varied, where some participants confirmed that m-government services are not new for them. While, other respondents confirmed that they are completely unaware of it. From another side, Participant 3 (focus group 1) said:

"I believe that m-government is an extension of e-government, in which mobile phones are used in order to perform government services. These services are accomplished either via SMS or by calls to national centers".

However, according to the respondent's comments, it was clear that the meaning of "m-government service" concept was known to the Saudi public, which confirmed the qualitative data collected for our study.

TABLE I
THE PARTICIPANTS IN THE FIRST FOCUS GROUP

King Saud University	The Age	The degree
The first participant	28	Bachelor of Medicine
The second participant	30	Master of Applied Medicine
The third participant	25	Bachelor of Science
The fourth participant	24	Bachelor of Information Technology
The fifth participant	32	Master of Applied Medicine

TABLE II
THE PARTICIPANTS IN THE SECOND FOCUS GROUP

Imam Muhammed Bin Saud University	The Age	The degree
The first participant	29	Bachelor of Medicine
The second participant	31	Bachelor of Medicine
The third participant	35	Bachelor of Medicine
The fourth participant	34	Master of Information Technology
The fifth participant	31	Master of Computer
The sixth participant	27	Master of Education
The seventh participant	26	Bachelor of Science

V. FACTORS AFFECT CITIZENS' ADOPTION OF M-GOVERNMENT

Various factors that affect citizens' adoption of m-government services in Saudi Arabia were mentioned by the participants. The following subsection describes the identified categories of these factors.

A. Usefulness of M-Government

When focus group participants were questioned about the benefits of running their business with m-government, they have mentioned many advantages. Such awareness of people in Saudi Arabia about m-government benefits reflects m-government usefulness towards its distinct users (i.e. business and government employees, private citizens). A typical answer of respondents about m-government service benefits for citizen was: *"mobile government saves time and effort, as well as money"*. Other benefits were mentioned by focus group participants such as minimizing travel costs and efforts, as well as queuing. For instance, Participant 4 (focus group 1) mentioned that:

"In the past, the majority of transactions in Saudi Arabia required the presence of the citizen in the offices of service providers, which are mainly in big cities such as the capital Riyadh. Nowadays, m-government is helping the citizen to save his time of transport, as well as reducing distances between citizens and service providers".

From another side, many participants have expressed their point-of-view about the necessity of a full implementation of m-government services throughout the country. Actually, these participants believe that this m-government extension will contribute towards the development of the country, such as improving government performance, especially when delivering its services. For instance, Participant 5 (focus group 2) said:

"Actually, m-government has many benefits for both sides, for the citizens as well as for the government itself. Hence, citizens now can save time and effort by requesting and then receiving government services without any need to travel to the service provider. On the other hand, transactions are being accomplished faster by the government, especially that auditors are unable to attend some of the ministries due to limited space or to inaccessibility to these places".

From what was said above, it is clear that a full implementation of m-government will be beneficial for various stakeholders, at the individual level (i.e. citizen and employees), as well as for the country itself.

B. Ease of Use

Many of focus group participants have confirmed that using m-government was an easy task, especially because the use of mobile and Internet services is easy and familiar to them. Hence, Participant 1 (focus group 2) said:

"I have easily requested and received many m-services from various ministries so far".

Actually, the easiness of using m-government might vary according to the age of a user. More specifically, obstacles and difficulties in using m-government will be faced by the elderly more than the younger generations who already own mobile devices. Hence, providing a means to teach elderly people how to use m-government is crucial, especially through educational video recordings and graphics.

C. Connections (Wasta)

In Arabic culture, "Wasta" refers to "a form of corruption that involves using one's connections and influence in places of power, to get things done outside normal procedures".

Participants were questioned about how the implementation of m-government in Saudi Arabia services will be affecting the widespread of Wasta. Hence, it was clear from participants' answers that many of them believe that Wasta will be limited by m-government services; especially that the m-government system will be rejecting any unusual procedures. Additionally, many respondents believe that m-government services will give the opportunity to each citizen to equally run his business with the government, which is seen as one of the main benefits of m-government. For instance, Participant 2 (focus group 1) said:

"The best thing I see in m-government is that you are dealing with an electronic system that does not have a human effect when accomplishing the transactions. Therefore, the system is not concerned about the physical characteristics and features of the user (height, skin color, etc.), but only about his uploaded data which will affect the fulfillment of the transaction to be accepted or rejected. Another important advantage I see in m-government is the possibility to access the application anytime, without intervention from the employee that might be based on social or personal aspects".

D. Trust in the Mobile and in Government

When asked about trusting mobile devices to run a business with the government, participants' answers were different, with many of them believing in the safety of using m-government services. These participants linked their trust and safety feeling to the security software, and to the supporting technology. Participant 1 (focus group 1) said:

"I think that cell phones in particular and mobile devices in general, are providing awesome services. Therefore, I am planning to rely on my cell phone to accomplish my transactions with m-government".

Furthermore, focus group participants were questioned about the trust they have in the government, and if this encourages them to use m-government services. Hence, participants have confirmed their trust in the government and expressed their readiness for using such services. For instance, Participant 6 (focus group 1) said:

"When you deal with services such as those provided by the Ministry of Interior, then you have a feeling of trust and security in their transactions. It is this feeling that encouraged me to perform my transactions electronically every week".

According to focus group participants' answers, there was a general agreement between them that they trust the government; especially that the latter is directly responsible for implementing m-government services without any intermediate agencies or companies.

E. Citizen Satisfaction

In order to assess their satisfaction about m-government services, participants and respondents were questioned about the services they have already experienced, and if they correspond to their expectations. The following is an example of obtained answers: For instance, some participants have different degrees of satisfaction from a ministry to another, such as Participant 5 (focus group 2) who said:

"As I have experienced many m-government services that were provided by many ministries, then the degree of my satisfaction about what I received was varied. However, generally I consider myself as satisfied with what I got".

It was highlighted in the participants and respondents' answers that there is a general satisfaction about m-government services in Saudi Arabia. Nevertheless, this satisfaction has various degrees depending on the ministry that is providing the service, as well as the type and quality of service being provided.

F. Service Quality

Additionally, participants were asked their opinions about the quality of the provided m-government services, their understanding of the concept of "Service quality" as well as the importance of this factor to them. From the obtained answers, participants have expressed their belief in the importance of the service quality factor in order to spread m-government services throughout the country. For instance Participant 5 (focus group 1) said:

"I believe in the fact that quality of a service is more relevant than its quantity. For instance, providing one service with high quality by a specific ministry is better than providing 10 services where the quality is weak or null".

Hence, for many participants service quality was linked to transaction accomplishment without interruption. Additionally, other participants believe that some ministries pay more attention to service quantity rather than services quality.

G. Suggestions from the Participants

Many participants and respondents believe that many improvements are required in order to spread the use of m-government services throughout the country. The following points are examples of suggested improvements given by the participants:

- 1) M-government technical infrastructure should be fully implemented in order to establish links between organizations.
- 2) Taking advantages of other countries experience with the m-government and learn from it.

- 3) Making the public aware of the necessity and benefits of m-government services.
- 4) Using incentives for promoting the use of m-government services by the public.
- 5) Working towards improving public skills (e.g. by providing computer and Internet courses), in order to make the use of m-government easy.
- 6) Providing unlimited and varied support to the public (e.g. technical, educational and informative support), in order to make the use of m-government services easy.
- 7) Providing legislative support to the public, via laws for privacy and security protection.
- 8) Taking culture differences into account when developing m-government applications, in order to consider various sectors of society.
- 9) Cooperate with the private sector for the management of m-government application, in order to ensure the quality of provided services.

These suggestions mentioned by participants highlighted their vision about the requirements of m-government services, which should be taken into account by the government in order to make their services provision successful (e.g. technical infrastructure and awareness, etc.).

VI. CONCLUSIONS

We collected our data from two focus group interviews using participants of different ages, backgrounds and levels of expertise. After analyzing and interpreting the participants and respondents' answers, we observed that many factors are affecting Saudi citizens' adoption of m-government services, specifically including trust, satisfaction, as well as ease of use, usefulness and mobility. We recorded several suggestions, being most important that m-government technical infrastructure should be fully implemented in order to establish links between organizations, using incentives for promoting the use of m-government services by the public and cooperate with the private sector for the management of m-government applications, in order to ensure the quality of provided services. This research has reported findings of a first test using focus groups to gain a better understanding of citizens' needs and requirements to m-government in Saudi Arabia, as an example of a developing Middle East country.

The limitations of this research are that the participants were from university environments only, and thus, are not completely representative of all groups of citizens in Saudi Arabia (e.g. not excluding temporarily workers). Therefore, the future work of this research is to develop a questionnaire to gather citizen's requirements of m-government services from different people in different ministries, not only from the educational environment.

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