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The Roles of Intermediaries in the Diffusion and Adoption of E-Government Services

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ABSTRACT

Many developing countries are in the initial stages of implementing electronic government to improve public sector services and deliver them in an effective and efficient manner. Some cities of the Kingdom of Saudi Arabia are focusing on public sector transformation efforts to increase accessibility and availability of their services and to enhance services in civil administration. Madinah City is one such example where large investments have been made since 2003 to implement electronic services and develop various delivery channels in the public sector. Thus, the government of Madinah has launched the “Khdamatec” electronic offices (e-offices) concept under their national electronic government (e-government) modernisation agenda to facilitate service delivery to citizens and seamless interaction to communicate their needs. This paper uses an empirical study to examine the role of intermediaries in facilitating the adoption and diffusion of e-government in Saudi Arabia. A survey of citizens in Madinah City is used to examine perceptions of using online public services through the Internet. The survey is complemented by a case study to identify issues that influence the progress of the Madinah local e-government project from the viewpoint of government officials responsible for managing intermediaries. These empirical findings highlight computer literacy, Internet access, trust (perceived security and privacy), and awareness in using e-services as the most salient factors currently influencing e-government diffusion and adoption in Saudi Arabia.

Keywords: E-government adoption, diffusion, intermediaries’ roles, Saudi Arabia.

INTRODUCTION

The Internet and information communication technologies (ICTs) are important gateways in e-government systems and play key roles in service delivery. They provide a direct connection between service providers and their clients. The Internet has been proposed as a tool to bypass the role of traditional intermediaries as gateway service providers (Gellman, 1996). This argument is mainly based on reducing the cost of service transactions (Gellman, 1996; Malone et al., 1987). However advances in the Internet and ICTs reduce transaction costs, intermediaries could still exist as service providers between parties. This is particularly significant in e-government services where e-government systems fail to resolve the coordination between government and citizens (Heeks, 2003).

Furthermore, in developing countries, limited ICTs, the lack of Internet access, the lack of the skills needed to use e-services (also known as the digital divide), and the lack of citizens’ trust in technology (AlSobhi et al., 2010; Heeks, 2003; Sahay & Avgerou, 2002) have resulted in low diffusion and adoption of e-government services. In the new developments of multichannel service delivery, traditional intermediaries have become a central issue for developing countries to leverage the e-government relationship with their stakeholders, government, businesses, and citizens (Al-Sobhi et al., 2010). The intermediary provides a trusted information channel gateway, as well as help and support (Bailey & Bakos, 1997; Sarker et al., 1996), which may have an impact on citizens’ usage of e-government, services (AlSobhi et al., 2009).

As the aim of e-government systems is to deliver e-services for different stakeholders and citizens in particular, intermediaries have been widely used for several years in online environments in some developing countries to create successful government-to-citizen relationships (AlSobhi et al., 2009). Many researchers show that developing G2C e-government relationships has limitations due to many barriers, such as the lack of ICT infrastructure and of ICT skills among citizens in developing countries (Al-Fakhri et al., 2008; AlSobhi et al., 2009; Heeks, 2003). As a result, intermediary

organisations can play a significant role in providing citizens with a useful access gateway and support for e-government services, and could assist in e-government service dissemination (Al-Sobhi et al., 2010).

Although a number of studies related to developed countries propose to determine factors that encourage citizens to use e-government services, relatively few studies related to developing countries have been done (AlAwadhi & Morris 2008; Al-Fakhri et al., 2008; AlSobhi et al., 2009). One of these countries is Saudi Arabia. Although research that explores the role of intermediaries in the e-government context is vitally important (Al-Sobhi et al., 2009; Janssen & Kilevink, 2009), very little research has been carried out on this topic. Therefore, understanding what motivates government strategies to build intermediary organisations under their e-government strategy has research value and implications for strategy makers and researchers. Thus, this paper seeks to address the following questions. First, what are the reasons behind developing intermediary organisations regarding e-government strategies? Second, in the context of intermediaries, what value does an intermediary add to citizens and government as a possible subset of the facilitating conditions of Saudi Arabia's e-government (see AlSobhi et al., 2009)? This exploratory study took place in city of Madinah in Saudi Arabia. In this context the study investigated the roles of e-offices (an intermediary with a physical presence that acts as a mediator for citizens who require access to e-government services) in facilitating e-government services in Saudi Arabia.

The paper is structured as follows. The next section reviews literature concerning the role of intermediaries in e-services and the role of trust in influencing citizens' adoption of e-government services. The next section examines the background of e-government in Saudi Arabia (that is, its initiatives) and the roles of intermediaries in the Saudi e-government initiative. After this, the authors present the research methodology adopted for the study. The next section presents the research findings. Finally, the paper concludes by summarising the key findings and outlining some recommendations for further research.

LITERATURE REVIEW

Prior research shows that one of the most significant current issues in e-government success is the adoption and diffusion of e-government services (Carter & Belanger, 2005; Moon, 2002; Warkentin et al., 2002). These issues rely strongly on the implementation of a good infrastructure that facilitates e-service flow among e-government stakeholders, government, citizens, and business (Ebrahim & Irani, 2005; Medjahed et al., 2003; Moon & Norris, 2005). Heeks (2003) carried out a study that investigated the implementation failure and success rates in developing countries and showed that (1) 35% of e-government projects in developing countries are total failures (projects never implemented), (2) 50% are partial failures (major goals for the e-government project were not attained and/or there were a large number of unwanted results), and (3) 15% are successful (all e-government stakeholders reached their major goals and had a good experience). He drew attention to distinctive categories of e-government implementation in developing countries that are often observed as a gap between the design of e-government projects and the actual experience of users. Therefore, the roles of the intermediary are discussed in the following section.

It is necessary here to clarify exactly what is meant by the term "intermediary." An intermediary is an organisation where services are transferred and passed onto others (Janssen & Kilevink, 2009). In the literature, the term tends to be used to refer to third-party structures that operate in an electronic environment and help in the dissemination of information to societies (Howells, 2008; Janssen & Kilevink, 2009; Sarker et al., 1998). An intermediary is commonly used to help in service transformation yet is a concept that is difficult to define easily. However, this study adopted the definition offered by Janssen and Kilevink (2009), who defined an intermediary as "any public or private organisation facilitating the coordination between public services providers and their users" (p. 38). In this research case study, users are citizens and businesses.

With the emergence of Internet applications and the growth of e-businesses during the 1990s, there was increasing concern that the roles of intermediaries were being eliminated, which is known as disintermediation (Gellman, 1996; Malone et al., 1987). For instance, Gellman (1996) studied disintermediation and showed that a number of invisible changes will happen after technologies (for example, establishing Web sites via the World Wide Web) are diffused through societies, such as encouraging the roles of traditional intermediaries to be bypassed. However, there is a lack of empirical evidence to support this argument. Other studies that contradict this view suggest that although the Internet and associated ICTs may reduce the roles of traditional intermediaries, they may also result in increasing their roles in some cases where factors such as trust may influence their position (Bailey & Bakos, 1997; Sarker et al., 1998). Bailey and Bakos's argument relies too heavily on the qualitative analysis of 13 case studies. Their findings showed that the number of roles for traditional intermediaries emerged in the context of electronic markets which cannot be easily eliminated by direct interactions via the Internet.

Bailey and Bakos's study identified four roles as follows: aggregating, matching supplier and customer, providing trust, and providing inter-organisational market information (1997). First, intermediaries may enhance trust by reducing the risk of transactions failure, by ensuring transactions between parties have been completed, and by keeping all parties (that is, service providers and requesters) up to date with transaction processes. Also, a traditional intermediary may provide legal contact

between parties, providing the authentication and secure communication needed in such a relationship. Another role they suggested is that intermediaries facilitate the transfer of information between parties in the case of a lack of reliable infrastructure and standard electronic service, thus promoting a desire for value added by the facilitator (third party). Along these lines, Datta and Chatterjee (2008) argued that intermediaries in the electronic market are emerging because of inefficiencies of electronic mechanisms to provide services. They posited that this will influence consumer behaviour to trust in a third party working as a link between service provider and requester. The third role given in Bailey and Bakos's (1997) study concerned matching a customer's need for services to what the supplier offers. Finally, the intermediary aggregates the requests of many customers to products from different suppliers.

Similarly, Ehrlich and Cash (1999) stated that the role of an intermediary is often invisible. For example, one of the hidden roles that intermediaries may provide is to support and help users with new systems. This role arises between the users' beliefs and their ability to use the systems. Howells (2008) suggested a significantly different role of intermediaries that works well on many different issues such as information diffusion and their influence on adoption rates within society. According to this research, third parties such as intermediaries can play a major role in the adoption and diffusion process by helping to standardise the technologies that are used to deliver e-services. This is particularly significant in the e-government context as the ICT applications used in government can be fragmented and diverse. Moreover, when taken in the context of public services, intermediaries can help to increase the points of availability of services for citizens, particularly for those in areas where there is a digital divide. In this context, using an intermediary can support the training and education needs of citizens by facilitating the assisted use of technology. This enables the gradual transition of citizens to "self-using" new technology (Griffin & Halpin, 2004). Other benefits highlighted in the literature include the potential of electronic intermediaries to reduce the perceived risks of e-services and produce a trusting environment (Bailey & Bakos, 1997; Sarker et al., 1996).

Many studies have highlighted the importance of trust in the adoption and acceptance of new technologies and have assessed trust as an important factor that predicts user intention of e-services (Gefen et al., 2005; Pavlou & Fygenson, 2006). Once the interaction between parties takes place in a nonphysical mode from a remote distance through the Internet, trust becomes an essential issue to be defined and measured. Trust plays a major role in creating the initial relationship between citizens and e-government when citizens do not know about e-services providers (Carter & Weerakkody, 2008). Rotter (1971) defined trust as "an expectancy that the promise of an individual or group can be relied upon." Literature classifies trust in two parts: (1) trust in the body or entity that provides the services, and (2) trust in the tools that will be used to deliver those services to users. Teo et al. (2008) argued that trust in the "government organisation" is a necessary condition. Trust in the e-government enabler is considered a significant, salient factor that predicts e-government adoption (Carter, 2008; Carter & Weerakkody, 2008; Gefen & Warkentin, 2002; Sang & Lee 2009). In this respect, intermediaries will play an important role in enhancing trust and assist the citizens to conduct on transactions by providing a third party point of access to online services where citizens will deal with human facilitators to access online services rather than through direct internet connection (Bailey & Bakos, 1997). Furthermore, intermediaries will help reduce the risks associated with sharing information on the Internet, such as the risks of privacy and security (Carter & Belanger, 2005). Privacy and security refer to citizens' trust in the electronic medium, where people usually have concerns about the security of the technology in exchanging and storing their personal information, particularly when online financial transactions are involved (Carter & Weerakkody, 2008). E-government adoption, in turn, is dependent upon citizens' beliefs that the medium used by the government to provide e-services is highly secure and reliable for transmitting private information. Thus, a high level of trust is likely to increase citizens' desire to use e-government services (Teo et al., 2008; Gefan et al., 2005) and in this context intermediaries will play a key role in helping facilitate e-government adoption, particularly in societies where citizens are less-internet savvy.

As e-government delivers public services, it is essential that e-government services be able to reach all populations alike, including those citizens with no Internet access and those who have less ability to cope with new technology. The need for governments to expand e-government services to all their citizens is further compounded by the increasing numbers of people without "e-literacy," a result of the digital divide. Belanger and Carter (2006) suggested that e-government is hindered by the digital divide, which often mirrors the gap between the economically well-to-do and less well-to-do in a country, as well as the gap between developed and developing nations (Lam & Lee, 2005). According to Belanger and Carter (2006), the digital divide is classified as the ability to access the Internet and the skills needed by citizens to use technologies. Moreover, barriers to accessing the Internet were classified as age, level of education, and income. The skills needed by citizens are classified into two types: skills needed by citizens in order to obtain e-government services and information literacy (Belanger & Carter, 2006; Jaeger, 2003). Although an increasing number of citizens are utilising e-government services, the digital divide can be considered as one significant barrier that impedes many citizens from adopting e-government services (Belanger & Carter, 2006). In the context of developing countries and in the realm of adoption and usage of e-government at the individual level, a recent study by AlAwadhi and Morris (2008) aimed to investigate factors that influence Kuwaiti

citizens' adoption and use of e-government services. Their results suggested that facilitating conditions are one important factor that determines citizens' usage of e-government services (AlAwadhi & Morris, 2008). A number of studies have revealed that the infrastructure development in the Kingdom of Saudi Arabia is lacking (Al-Fakhri et al., 2008; Al-Sobhi et al., 2010).

E-GOVERNMENT IN SAUDI ARABIA

The Kingdom of Saudi Arabia (KSA), a rich developing country in the Middle East, started implementing national e-government projects in 1998 (Abanumy et al., 2005; Sahraoui et al., 2006). According to a United Nations report, in the context of e-government readiness, KSA significantly transformed its electronic service delivery between 2005 and 2008 (UN, 2008). The KSA's e-government efforts are largely focused on big cities like Riyadh, Mecca, and Madinah. However, an in-depth analysis of these cities illustrates that they have merely managed to implement basic e-government services, with emerging research studies accentuating various barriers to successful implementation and progress that are linked to the government (service providers) and its citizens (users) (Abanumy et al., 2005; Al-Fakhri et al., 2008).

Therefore, the Saudi government has achieved a number of initiatives to assist the adoption and diffusion of ICTs in general and e-government in particular. The program of e-government implementation is managed by "Yasser," which is one collaborator company in KSA. This project is one of numerous initiatives that are dedicated to develop and enhance e-services for Saudi citizens (www.yesser.gov.sa). Generally, e-government initiatives in KSA are seen to be a move into cooperation with the private sector to manage and support the e-readiness of e-government services and to enhance Saudi society in order to be able to use the Internet and e-government services at national and local levels (AlSobhi et al., 2009).

In 2003 another project was established locally in Madinah City. The e-government programme in Madinah is a partnership between the KSA government and the private sector. Based on this partnership, electronic services are developed, managed, and expanded. The Madinah initiative is a set of different projects operating in the Madinah region in order to develop a comprehensive e-government system. Those projects include government procurement, training, design, e-learning, e-commerce, digital economy, and Khdamatec (the Arabic term used for services, which in the e-government context are services offered by e-offices or intermediaries). However, all of these projects are still under development, and only the Khdamatec (e-office) project has been established. The concept of e-government in Madinah is designed to cover 60 government bodies working in the region (AlSobhi et al., 2009).

The overall vision of Khdamatec (or Madinah intermediary e-offices) involves the management and operation of electronic service delivery and related systems and support training of management staff in different government agencies in the use and delivery of e-services. Khdamatec agencies are seen as an initial model of one of many multichannel strategies that are identified in Madinah City for e-government service delivery. The main reason for developing this method is to establish a new and convenient way of delivering services to citizens and to assist those citizens who are less computer savvy in adopting e-government systems. According to AlSobhi et al. (2009), the motivation for establishing the e-offices was mainly influenced by the following: (1) the difficulty of verifying the identity of stakeholders (e-identification), (2) the challenges that Madinah citizens faced using technology and accessing the Internet (digital divide), and (3) the difficulty of finding reliable methods those citizens can follow in order to pay for services that request a payment (e-payment). Given such a background, the roles of an intermediary come as a result of a lack of technological readiness and social potential for e-government. The next section will briefly discuss the research approach adapted for the current study.

METHODOLOGY

This study is based on a mixed method (qualitative and quantitative) research approach. The aim of this study is to examine e-government implementation (intermediaries of e-government services) from the government's point of view. It also evaluates e-government progress from the citizens' perspective. To understand the role of intermediaries (e-offices) in e-government diffusion in Saudi Arabia and to explore the arguments set forth above, the researchers first reviewed official reports and literature from the Madinah government that are related to intermediary roles in facilitating diffusion and adoption of e-services. The aim of this review was to highlight the research gap and objectives. The data collection via documentation consisted of official information reports published by the ImaratAlMadinah organisation within the Saudi Arabian government. However, these publications do not provide an overall illustration of the current state of affairs. To the contrary, to a certain extent they highlight the major benefits and current challenges facing e-government implementation in Madinah City. After a review of the documentation, the researchers carried out a questionnaire survey to compare and contrast factors that have been highlighted by government reports and documents and to record citizens' views on accessing e-government services using the Internet (Saunders et al., 2002). This was important to understand the role of intermediaries in facilitating e-government adoption and diffusion, as the government's rationale for implementing intermediaries was based

on improving citizens' accessibility of e-government services. This questionnaire was followed by interviewing the key people that are responsible for administrating the intermediary (e-offices) organisation at Madinah City. Figure 1 shows the research methodology that aided the researchers of this study to answer the aforesaid research questions. Madinah City was selecting in this research because it is the only city in Saudi Arabia that has implemented intermediary (e-office) gateway e-services under their local e-government strategy (Al-Sobhi et al., 2010).

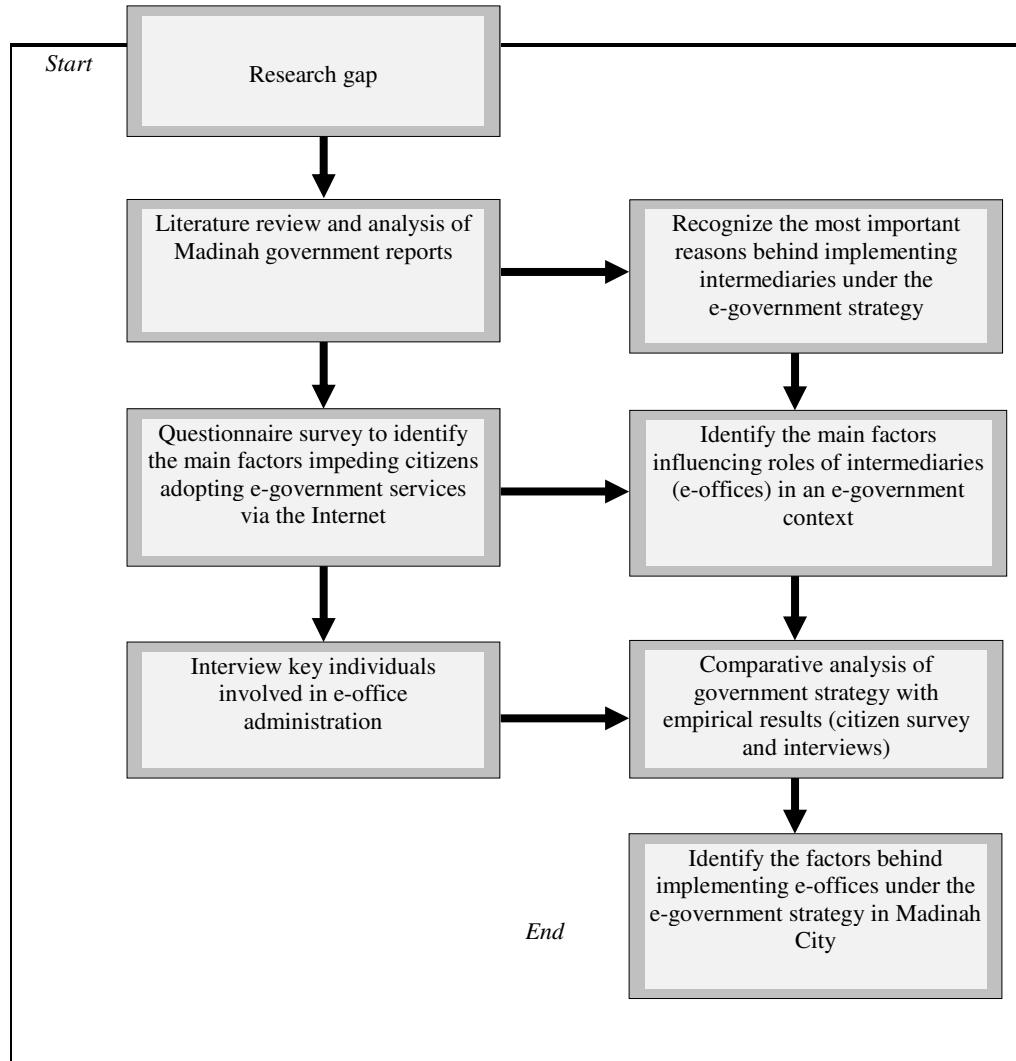


Figure 1: Stages of the Research Process

The questionnaire consisted of 32 questions and included single answer, multiple choice, closed-ended, and 5-point Likert scale questions, which ranged from strongly disagree to strongly agree. After the questionnaire was built, a pre test was done using two researchers and three practitioners in order to improve the questions and enhance the comprehension of respondents before final distribution (Saunders et al., 2002). As the questionnaire was designed in English format and the targeted research context is an Arabic country (Saudi Arabia), the authors converted the questionnaire into Arabic language and validated the translation by sending the questionnaire to two academic staff in a Saudi university. The survey questionnaires were then distributed randomly to 100 citizens in Madinah city, from September to October 2008.

Furthermore, as mentioned above, the primary focus of this research is to explore the role of intermediaries in an e-government context. Thus, a semi-structured interview (Yin, 2003) was conducted by visiting three e-offices in different areas of Madinah City. The interview protocol used was as follows. The interviewees decided a convenient time and location for the interviews and were given enough time to make arrangements. When the interviews commenced, the interviewees

were informed that they could withdraw from the interview at any time if they desired. The interviews were tape-recorded with permission from the interviewees. It was essential to use a tape recorder in order to have enough time to analyse the data. The interviews were transcribed immediately after completion and analysed to identify relevant themes.

EMPIRICAL FINDINGS

Citizens' questionnaire result

Respondents' Profile

The researchers received 81 responses out of more than 100 samples distributed. Out of those 81 responses, 76 were found to be usable, and 5 were discarded because of incomplete answers. Of those 76 respondents, 69% were male and 31% were female.

In terms of age, 53% were between the ages of 19 and 30, and 35% were between 31 and 45. Additionally, 12% of respondents were younger than 18 or between the ages of 46 and 60. Regarding educational level, 49% held undergraduate degrees and 34% held high school diplomas. Respondents with postgraduate degrees constituted 8%, with the remaining 10% of respondents defined as "other."

Computer literacy and Internet access

A strong connection has been reported in the literature between computer literacy, Internet access, and e-government usage (Belanger & Carter, 2006; Carter & Belanger, 2005). When examining the computer literacy of Madinah City, 100% of respondents mentioned that they are able to use computers. Furthermore, 26% of respondents were found to use the computer for less than 1 hour a day; 41% used it between 1 hour to 3 hours a day, 22% used it between 4 to 10 hours a day, and 3% of used it for more than 10 hours a day. These results show that the computer literacy of Madinah citizens is fairly high.

In terms of using computers for accessing Internet applications (for example, e-mail, chat programs, and Web browsers), the results showed that 75% of respondents used a computer to access Internet applications, and the remaining 25% of the sample did not access the Internet. Furthermore, 82% could access the Internet at home, 14% at work, 4% at Internet cafés only, and 1% at both home and work, thus showing that Internet access is not a problem for Madinah citizens.

However, on the question of using Internet applications to utilise e-government services, this study found a weak response with only 15.8% using the Internet to access e-government services. A large amount of the sample (45%) utilised the Internet for searching for news and information, 31.6% used it for e-mail, and 6.6% used it for chatting. These results indicate that Madinah citizens have a high level of Internet access; however, their usage was mostly limited to searching for news and information.

Trust and perceived security and privacy

With regards to citizens' trust in using e-government services in Saudi Arabia, the results revealed that 30% of respondents felt that citizens trusted e-government Web sites, while 34% felt that citizens were reasonably satisfied in terms of trust issues. However, the results also illustrated that 36% of citizens were somewhat less trusting of online transactions. Nevertheless, because the majority of respondents perceived citizens' trust as average or neutral, trust issues could negatively affect the use of e-government services in Madinah City. Figures 2 and 3 show the survey results that outline the level of awareness and trust among citizens for using the Internet to access e-government services.

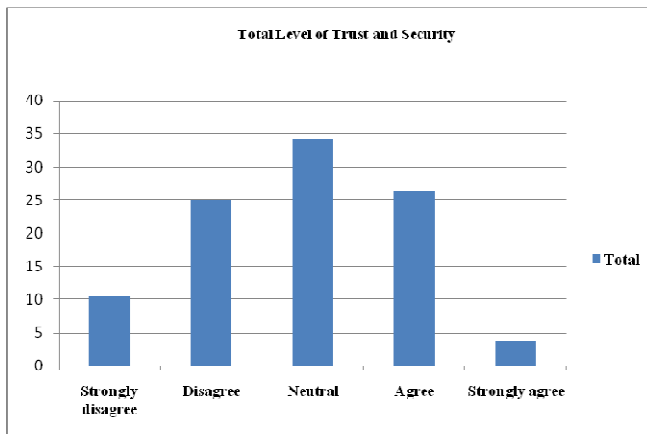


Figure 2: Do Citizens' Trust the use of online government services through the Internet

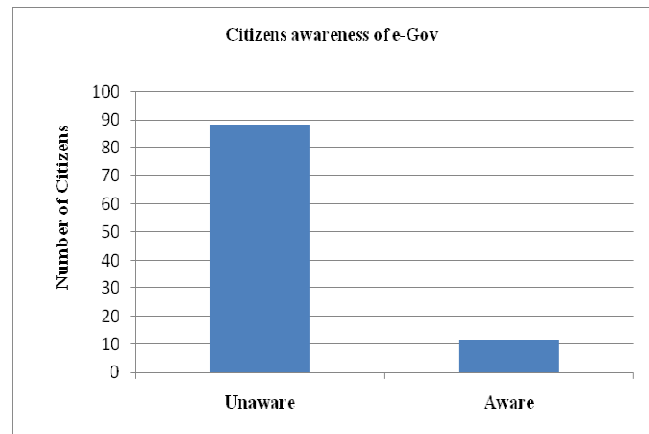


Figure 3: Ratio of citizens' awareness of online public transactions

Awareness

A number of researchers of e-government suggest that issues like awareness are major determiners of the success of future usage of e-government services. Therefore, the low level of awareness found in this study will affect e-government adoption (Al-Shafi & Weerakkody, 2007; Reffat, 2003) in Madinah City in particular and Saudi Arabia in general. In this study when the survey participants were asked if they were aware of e-government services in Madinah City, 88.2% of the respondents indicated that they had not heard about the e-government services initiatives in Madinah City, and only 11.8% of the response reported that they were aware of the e-government initiatives in Madinah City (see figure 3). These results indicate a low level of awareness of e-government services among Madinah citizens.

Case study result

The empirical research conducted in this study with managers who are responsible for running the intermediaries (e-offices) revealed that although overall e-government implementation and adoption was slow in Saudi Arabia, intermediaries were helping to improve e-government adoption and diffusion. However, interviews with e-offices managers and other staff in Madinah City e-offices identified a number of challenges currently facing e-offices and e-government implementation. These challenges are discussed below.

Computer literacy and e-government access

The focus of e-office centres in Madinah City was mainly on connecting Madinah government departments with their citizens. To complement the interviews with government officials, interviews were conducted with managers of three e-offices in Madinah City. One e-office manager stated that "the main reason to introduce intermediary e-offices in Madinah e-government strategy is to provide a link between government and citizens." Therefore, the major focus of the e-offices is the way in which citizens interact with them by training citizens to use new technologies and services in relation to e-government initiatives.

The e-offices were trained to provide help and support for Madinah citizens. As an e-office centre manager said, "[It] is a very important role of our centre to support training and learning needs for using Internet applications and computers. Our services are mainly limited to giving support for accessing e-government services on behalf of citizens; this is because of our limited resources and capabilities." As the interviewees stated, training people in the self-usage of e-government services is a very important role in the Madinah e-government strategy. The training and support of new e-government services is crucial, as all interviews with e-offices managers clearly indicated a positive attitude from e-office centres to promote the training of Madinah citizens in relation to the e-services gateway.

In this study, intermediary e-offices were found to assist citizens in adopting e-government services. Madinah citizens generally had difficulty using and accessing the Internet to obtain e-government services. As one of the e-office managers said, "Although we are here to help citizens to access e-government services, the visitors to our offices are usually having difficulty using technology like the Internet, and some visitors do not have the Internet at all." Although a few interviewees agreed about promoting citizens' adoption rate of e-government services, an essential role of e-offices is to help citizens

access e-government services. Another manager argued that citizens need e-offices not because of access issues but because of issues involving trust, information privacy, and security. This manager stated, "Visitors come to access the Internet even though some citizens have a computer at home and have an Internet connection; however, they visit us because they currently have a very low level of trust in e-services."

Trust, security, and privacy

The above comments suggest that a low level of trust in technology within the Madinah community has a negative impact on the take-up of e-government services. As shown by the literature, privacy and security inhibit citizens' adoption rate of e-government services. An e-office manager pointed out that "we have record files for all our customers, so citizens can either come to our office to ask for new services, or they can ask for services by phone and we can perform the services on their behalf." Interviewees were asked what the additional roles of their third party e-office centre were, and one interviewee highlighted that the role of e-offices is to build trust between the government and citizens in relation to the e-services provided electronically. Thus, the role of the third party is to enhance the relationship between the government and its citizens. From the government's perspective, its role is to authenticate citizens in some e-services that require citizens to be authenticated by e-offices centres. Furthermore, e-offices control the transaction flow in both directions between the government and its citizens.

Another interviewee commented that "we have electronic authorisation in the e-government portal, so for each service required from citizens that needs our help and support, they can authorise us electronically. Therefore, we can take responsibility for all transactions without citizens needing to come to our place in order to start the work." In this respect of providing personal information or any financial transactions, intermediary e-office centres have an important role. As one interviewee pointed out, "a number of citizens are confident to share personal information with us. We can also make payment on behalf of citizens from our bank account, and they can pay us back by cash." Another interviewee added that it is very important to realise that a number of their customers, in addition to having no Internet access, do not have bank accounts to pay for e-government services.

Awareness

Besides the findings mentioned above, e-office managers stated that awareness of e-government services in the Madinah community is very low and people are not always happy with new technology gateways, especially old people with poor education. One manager suggested that if the citizens knew about the benefits of e-government, it would likely increase the adoption rate of e-government services. Another stated that awareness has to be raised either through e-office centres or via the media in order to realise the potential benefits of e-government services on a broad scale.

DISCUSSION AND CONCLUSION

This paper explained the central importance of implementing intermediaries' organisation in the e-government context. The current study was designed to contrast the Madinah e-government strategy of using intermediary roles in e-government services. These findings suggest that, in general, the intermediaries play important roles, including disseminating e-government services into society and promoting the adoption of those services. The results of this investigation show that, from the government's perspective, the effectiveness of intermediaries suffers because of the lack of technological readiness and the difficulties associated with e-service adoption. However, this result was not confirmed by the questionnaire survey, which revealed that citizens' ability to use computers and Internet applications is high enough for them to use new e-government services. Nevertheless, Madinah City's strategy was found to match other factors highlighted by intermediary (e-office) managers and a review of literature regarding issues of trust and security. From the citizens' point of view, using the Internet to communicate with their government is still unsatisfactory. Furthermore, this study also showed a low level of awareness in e-government and that most Madinah citizens are unaware of e-government services. The literature states that these factors are determiners of successful adoption of e-government services (Al-Shafi & Weerakkody, 2007; Reffat, 2003). Further findings of this study gave a clear picture of the roles of intermediaries in e-government in Saudi Arabia. However, Madinah should further consider important factors such as awareness, as the survey highlighted.

The current study confirms previous findings (Bailey & Bakos, 1997; Chatterjee, 2008). Intermediary theory suggests that the most important roles of intermediaries are to enhance trust between two parties. This is confirmed by government officials and the empirical findings in this study. As outlined in the literature, a number of factors determine successful adoption of e-government services. Carter and Belanger (2005) stated that trust is an important factor that affects citizens' adoption of e-government services. This study also suggested that intermediaries (e-offices) are essential, particularly for developing countries as they develop their infrastructure and bridge technical gaps, as well as the digital divide.

The current study has a number of limitations. First, the survey research focused on a limited sample of Madinah citizens. Future research could therefore focus on extending the survey sample. Furthermore, the interviews to explore aspects of implementation and the role of intermediaries in e-government were carried out in three e-offices involving interviews with three managers. Further research should be carried out to explore in more depth the rationale for implementing intermediaries in Saudi Arabia and understanding their role in e-government adoption.

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