Exploring citizen perceptions of barriers to e-government adoption in a developing country

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Abstract

Purpose – This study aims to explore how citizens socialise and network in relation to using and adopting e-government. The paper suggests that governments need to consider social networks when introducing e-government initiatives. Using qualitative research, this study explores the reasons, fears, motivations and factors with respect to e-government relevant to two social groups of people, those who do and those who do not have regular access to the internet in the Middle Eastern country of Jordan.

Design/methodology/approach – The study analyses the results of focus groups representing different social groups of Jordanian citizens across the digital divide. The focus groups followed the nominal group method to explore questions relating to e-government adoption. The nominal group method provided preliminary categorisations of responses; however, further initial and axial coding of data were used to analyse recordings of focus group transcripts.

Findings – Contrary to previous research, this study highlights the importance of considering factors that most likely appear as organizational terms, such as resistance to change, when investigating the adoption of e-government within a social community. Cultural and social themes that emerged include resistance to change, *wasta* (favouritism), and word of mouth (WOM). Few qualitative studies have investigated the main factors relevant to the adoption of e-government by citizens in the Middle East.

Originality/value – To investigate the adoption of technological innovations including e-government, this paper encourages researchers and practitioners in information technologies (IT) to consider cultural and social factors that have been rarely discussed in IT research in general and e-government in particular. Examples of these factors are *wasta* (favouritism) and WOM.

Keywords Developing countries, Adoption, Jordan, E-government, Qualitative method

Paper type Research paper

Introduction

E-government is a technological innovation that offers citizens improved and more equitable access to government services. Nations around the world have embraced this innovation; however research on e-government adoption has, to date, focused on developed countries in the Western World. E-government is a governmental initiative that has been designed and implemented by developed countries. It was implemented to suit the social and cultural systems of these countries. Therefore, major theories relating to the adoption of e-government services such as the model proposed by Carter and Bélanger (2005) require revision and adaptation to both the Middle Eastern context and the context of developing countries.

To investigate e-government adoption in Middle East, attention should be paid to social groups, which are dynamic communities that respond to changes such as the introduction of e-government. Potentially, various traditional and non-traditional channels, including interactive web sites and internet-based social networking applications, can offer social

groups in a community a unique means to express responses and reactions toward e-government initiatives. Therefore, it is necessary to obtain and evaluate these responses and reactions that might be a reflection for socio-cultural dynamics that those groups' interaction is based on. This study shows how social groups in the Jordanian community respond to the change occurring in their interactions with the government through e-government channels.

Jordan is one of the Arabic countries that have a collectivist based cultural system where the people are integrated into groups from birth (Hofstede, 2009). "Collectivism" has been clarified as: "a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty" (Hofstede, 2001, p. 225). This study therefore offers a better understanding for what drives e-government across cultures and social norms of different social groups in Jordan by providing a qualitative focus group-based study to capture the people perceptions towards e-government adoption in Jordan. Focus group participants represented Jordanian groups that either did or did not have regular access to the internet. Finally, this paper follows a new approach to extend a research work undertaken by Alomari *et al.* (2012).

This paper will introduce previous studies, theories, and models related to e-government adoption. Then, the focus group method used to conduct the current study will be demonstrated. After that, the analysis techniques will be highlighted. That will be followed by a presentation and a discussion of the significant findings. Before concluding the paper, the research implications, limitations and future research will be outlined.

Literature
Previous research has highlighted different factors that affect the adoption of e-government services by communities in both developed and developing countries. These factors can be considered as reflections of public perceptions and understanding of e-government.

Researchers and practitioners have run a constructive discussion about factors related to e-government adoption by providing empirical models. Carter and Bélanger (2005) designed a model of e-government adoption based on a study conducted in a developed country, the USA. On the other hand, Alomari *et al.* (2012) designed a model of e-government adoption based on a study conducted in a developing country, Jordan. Alomari *et al.* (2012) highlighted the importance of factors that were an actual reflection for the social and cultural cohesion of Jordan as a developing and Middle Eastern country. These factors include attitudes and beliefs that were examined in terms of religious beliefs. This paper will offer a contribution in identifying further factors relevant to citizens' perceptions of their interactions with government online through e-government in the developing country of Jordan. The following paragraphs report previous studies investigated the adoption of technological innovations in general and e-government in particular.

Trust in the internet has been reported to be one of the significant factors that influence the adoption of e-government by citizens in developed countries such as USA (Carter and Bélanger, 2005; Bélanger and Carter, 2009), developing countries such as Taiwan and Singapore (Chang *et al.*, 2005; Phang *et al.*, 2005), and Arabic countries such as Qatar (Al-Shafi and Weerakkody, 2008). E-government formulates

an interactive relationship between the government and citizens that might require citizens to reveal personal information or credit card details. Deakins *et al.* (2001) stated that this kind of relationship requires citizens' trust that can be one the main issues of e-government development. This study will investigate how trust in the internet determines the adoption of e-government by citizens in Jordan and what citizens mean when they discuss trust in the internet.

The literature also indicates the importance of addressing the issues that emerge as consequence of the introduction of the internet in communities such as Arabic countries where religion plays a significant role in life (Al-Saggaf, 2004; Hill *et al.*, 1998). In their study based on focus group interviews, Hill *et al.* (1998) found that religious views tend to be one of the socio-cultural features of the Arabic societies that in turn affect transferring information technology (IT) into practice. Norton (2002) states that Arabic religious beliefs can discourage internet usage due to a number of moral issues, such as access to adult themes. In his study to examine the effect of online communities of offline communities in the Arabic religious community of Saudi Arabia, Al-Saggaf (2004) presents different consequences of being involved in the online communities such as dissemination of incorrect information (inaccurate propaganda) about religion. This study will use Jordan as another example to investigate the role of religious beliefs that might play in influencing the e-government adoption in Jordan. Previous studies indicate the importance of the role of religion in the adoption and usage of IT in general (Hill *et al.*, 1998; Leonard *et al.*, 2004) and the internet and e-government in particular (Dimitrova and Beilock, 2005; Evans and Yen, 2005; Norton, 2002).

Previous research has highlighted that having the required skills to use the internet and computers is a major factor that would affect the adoption of e-government (Pons, 2004). Pons (2004) lists three main elements that should be considered to adopt any technology successfully and these are: awareness of the internet; understanding of the internet; and workers with IT skills. This current study will use these factors in examining e-government adoption amongst social groups in Jordan. Welch and Hinnant (2003) presented the significance of internet use in the context of e-government by conducting a study to explore the effects of transparency and interactivity on trust in government. Importantly, in an empirical examination of the influence of internet skills over e-government adoption and by surveying 260 citizens in the UK, Carter and Weerakkody (2008) conducted a study which aimed to compare e-government adoption in the UK to adoption in the USA. The researchers found that internet skills were not a significant predictor of e-government adoption in the UK. Also, the results show that internet skills may vary by culture in both the UK and the USA. In the USA, internet skill is a significant predictor of e-government adoption.

On the other hand, Vassilakis *et al.* (2005), based on a survey administered in three developed countries: the UK, Spain and Greece, indicate the significant role that computer skills play in influencing the adoption of government e-services. In the developing country of Thailand, Wangpipatwong *et al.* (2008) confirmed that computer self-efficacy is positively related to the continuance intention to use e-government web sites. In an empirical evaluation of both internet and computer skills' impact on the intention to use e-government services, Bélanger and Carter's (2006) frequently cited research on 105 participants in the USA revealed that computer experience does not influence e-government usage, while internet use has a direct influence on e-government usage. This paper explores how Jordanians' internet and computer skill confidence may influence their intention to utilise e-government web sites in their daily life.

The digital divide is another factor identified in previous research as one of the determinants of e-government adoption. Dugdale *et al.* (2005) stated that the internet needs to be available at all levels in order to develop strategies for the process of e-government implementation. The unequal opportunities of access to and use of the internet and computers has led to the emergence of the concept of the so-called "digital divide". The "digital divide" mainly refers to the gap between the people who do and do not have access to the internet and computers (Van Dijk, 2006). The digital divide is a serious issue, as many citizens may be excluded from the benefits of new technology, without access to the internet or computers. The digital divide was highlighted as one of the issues of e-government within developed countries such Australia, America, New Zealand (Dugdale *et al.*, 2005; Loges and Jung, 2001; Deakins *et al.*, 2001). In the USA, researchers provide an in depth investigation for the digital divide issues by focusing on its relationship with the internet and e-government adoption and usage. Thomas and Streib (2003) found, by analyzing data collected through a survey of 827 citizens in the state of Georgia, that race, education, income, age and metropolitan status are significant predictors of access to the internet and government web sites. Bélanger and Carter (2009), by surveying 105 people in the USA, found that income, education and age were the typical demographic characteristics affecting e-government usage. In Jordan, the digital divide is one of the current e-government issues affecting Jordan due to different factors including age, income and geography (Al-Omari, 2006). This research study will provide an in depth insight about the issue of the digital divide and its relationship with e-government adoption in the developing country of Jordan.

Word of mouth (WOM) – both positive and negative – has captured the attention of many marketing researchers, who consider WOM to be a commanding means of publicity. WOM in the electronic context may be relevant to citizens' intention to use e-government services. Therefore, it is important to compose a definition of "WOM" in relation to e-government. Based on the definitions reported by different researchers (Arndt, 1967; Westbrook, 1987), the current research paper define "WOM" in respect to e-services and information provided through the government web site to citizens as:

> The communication directed to citizens (end users) regarding the usage of services and information available on government websites by other users who have experienced or are aware of e-government services.

WOM has been found to be one of the main factors that determine the adoption of e-services. In the context of internet banking, Kim and Prabhakar (2000) conducted a quantitative survey-based study and found that WOM would contribute indirectly to determine the adoption of internet banking. Kim and Prabhakar's (2000) research reveals that an intermediate influence exists between WOM and the adoption of internet banking. Overall, there are relatively few studies that examine the relationship between WOM – positive or negative – and adoption in the context of e-government in particular and other electronic contexts in general. This could be an indication of a clear gap in understanding of the effect of WOM on the adoption of e-government. This current study will examine how e-government adoption may be influenced by WOM.

Wasta is one of the fundamental features of social life in Arabic countries (Cunningham and Sarayrah, 1993; Makhoul and Harrison, 2004; Whiteoak *et al.*, 2006). *Wasta* is an Arabic term that indicates the act and person that intercedes on behalf of another party or parties (Cunningham and Sarayrah, 1994). The term *Wasta* signifies the person who mediates

or intercedes on behalf of another, as well as the act itself (Feghali, 1997). Feghali (1997) mentions that the process of utilising influence in one's interpersonal network to receive favours is called *Wasta*. In *Wasta*, people deploy their interpersonal connections in order to obtain advantages that would not be obtainable otherwise. Several studies have been conducted to address the issues of *Wasta* within different contexts (Makhoul and Harrison, 2004; Whiteoak *et al.*, 2006) and comparison studies have examined the similar Chinese concept of guanxi (Hutchings and Weir, 2006). Within the technological context, the literature identifies a lack of studies that investigate the influence of *Wasta* on technology usage in general and e-government usage in particular. However, AlAwadhi and Morris (2009) provide a qualitative focus group-based study that identifies the factors influencing the adoption of e-government services in Kuwait. The results indicate that *Wasta* is one of the significant factors related to e-government adoption in Kuwait. The authors report that the majority of respondents will be encouraged to use e-government if its usage will lead to a decrease in the utilisation of *Wasta* (connections). This research will investigate how *Wasta* may influence e-government adoption in the context of Jordan.

Resistance to change is one of the factors that should be considered when addressing the topic of e-government adoption by citizens. However, there is a lack of research that explores resistance to change not only in the e-government context but also in the technological context in general. Commenting on the term of resistance to change, Coghlan (1993) states that change involves a move from the known to the unknown that leads to resistance. Zander (1950, p. 9) defines "resistance to change" as: "Behavior which is intended to protect an individual from the effects of real or imagined change". This study conceptualises the idea of resistance to change with respect to e-government as:

> An attitude of reluctance held by individuals in a social community when they perceive that changes may affect them negatively.

Whilst some researchers attempt to clarify how resistance to change drives e-government implementation and adoption within organizational contexts, this study focuses on addressing the issue of resistance to technology by citizens within a social community. Sathye (1999) conducted a survey-based study, in the context of internet banking to examine the factors influencing the adoption of internet banking by Australian consumers. The author involved the role of citizens in exploring the association between resistance to change and adoption of internet banking. Sathye (1999) reported resistance to change a findings s an insignificant predictor of internet banking adoption. This paper will clarify if and how resistance to change influences e-government adoption by citizens in social communities in Jordan.

Relative advantage is one of the theoretical components of diffusion of innovation theory (DOI) (Rogers, 1983). "Relative advantage" is defined as "the degree to which an innovation is perceived as better than the idea it supersedes" (Rogers, 1983, p. 213). Based on quantitative research, researchers found that relative advantage has significant impact on citizens intention to use governmental e-services such as income tax e-filling service (Ojha *et al.*, 2009) and non-significant on their intention to use governmental initiatives such as e-voting (Schaupp and Carter, 2005). The impact of relative advantage on the adoption of IT in general and e-government in particular has not been examined as a theme in studies utilizing qualitative methods. This research therefore provides an attempt to highlight how people in Jordan perceive interaction with the government through e-government as superior to traditional methods of interaction, such as paper-based work.

In summary, factors in relation to e-government adoption are presented in Table I. The following section presents the main research design and the approach used to conduct the current research paper.

Method

In order to explore how citizens socialize and network in relation to using and adopting e-government, this study presents the research design in Figure 1. Data was collected from focus groups representing different social groups of Jordanian citizens across the digital divide to obtain their perceptions of these factors. The focus groups followed the nominal group technique (NGT) (Van De Ven and Delbecq, 1974).

Focus groups are one of the key methods used in collecting qualitative data (Oostveen and Besselaar, 2004). Focus groups, like other data collection methods, have weaknesses and strengths. Morgan (1996, p. 139) mentioned that:

> [. . .]the weaknesses of focus group, like their strengths, are linked to the process of producing focused interactions, raising issues about both the role of the moderator in generating the data and the impact of the group itself on the data.

Focus groups utilize only a small section of the population making generalization of results difficult. This limitation was addressed in this by choosing focus groups that are representative of major relevant groups in the population sample. Focus groups can be influenced by groupthink (Morgan, 1996) which can limit the expression of diverse opinions. This limitation was addressed in this study by utilizing NGT which records both individual and group opinions (Delbecq et al., 1975).

On the other hand, Oostveen and Besselaar (2004, p. 67) identified the benefits of focus groups method as it "[. . .]enables the researcher to explore participants' views and experiences on a specific subject in depth". On the other hand, Morgan (1997) indicated that the opportunity to obtain a large amount of data within a short or limited time period is one of the main advantages of focus groups (Morgan, 1997).

Factor	Major research studies
Trust in the internet	Chang et al. (2005), Phang et al. (2005), Deakins et al. (2001), Al-Shafi and Weerakkody (2008), Carter and Bélanger (2005), Bélanger and Carter (2009)
Religious views	Al-Saggaf (2004), Hill et al. (1998), Norton (2002), Leonard et al. (2004), Dimitrova and Beilock (2005), Evans and Yen (2005)
Internet and computer skills	Pons (2004), Carter and Weerakkody (2008), Welch and Hinnant (2003), Vassilakis et al. (2005), Wangpipatwong et al. (2008), Bélanger and Carter (2006)
Digital divide	Dugdale et al. (2005), Van Dijk (2006), Loges and Jung (2001), Deakins et al. (2001), Thomas and Streib (2003), Al-Omari (2006), Bélanger and Carter (2009)
WOM	Arndt (1967), Westbrook (1987), Kim and Prabhakar (2004)
Wasta (favouritism)	Cunningham and Sarayrah (1993), Makhoul and Harrison (2004), Whiteoak et al. (2006), Cunningham and Sarayrah (1994), Feghali (1997), Makhoul and Harrison (2004), Hutchings and Weir (2006), AlAwadhi and Morris (2009)
Resistance to change	Coghlan (1993), Sathye (1999), Zander (1950)
Relative advantage	Schaupp and Carter (2005), Ojha et al. (2009), Rogers (1983)

Table I.
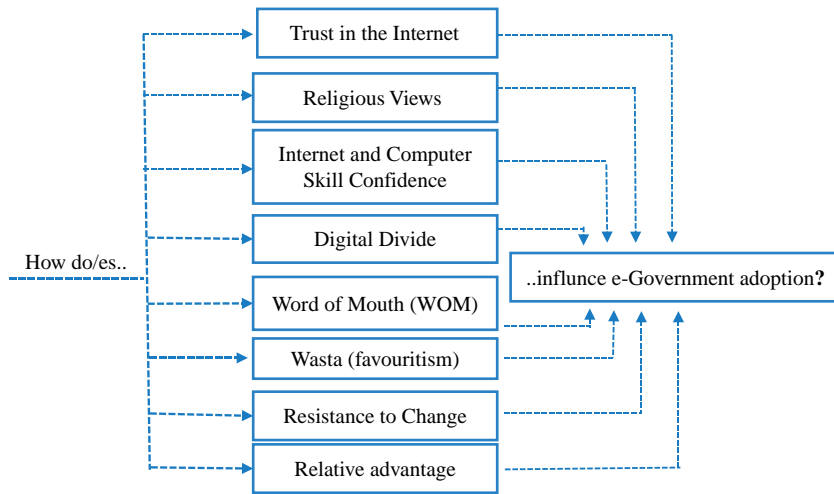Factors in e-government adoption

Figure 1.
Factors in
e-government adoption
examined in this research

A pilot focus group interview was conducted with four participants who were postgraduate students. The pilot focus group helped to modify the focus group questions based on participant's feedback and helped to predict the time required to conduct the focus group interviews.

After administering the pilot focus group interview, the final version of the questions and the document provided to the participants during the focus group interviews were designed. The final versions of the focus group documents including the six focus group questions were translated into Arabic by an accredited translator. Backward translation was used to ensure consistency between the English draft and the Arabic draft. Five focus group interviews were conducted with 30 Jordanian people who did and did not access the internet regularly. Each group was comprised of six participants. The table below identifies the five focus groups conducted with the participants who represented the different sections of society in Jordan (Table II).

Sample
The five focus groups were comprised of 30 Jordanian participants in total. Among the 30 respondents, 56.7 percent were males and 43.3 percent were females. Amongst the participants, 6.7 percent were less than 20 years old, 56.7 percent were in the range of

Group number	Group name
Group 1	E-government project within the ministry of communication and information technology (MOICT)
Group 2	University students
Group 3	Department of computer and information technology (CIT) at the water authority in the city of Irbid
Group 4	Al-Balqa' applied university
Group 5	Social security office

Table II.
Focus groups

20-29 years old, 30 percent were in the range of 30-39 years old, 6.7 percent were in the range of 40-49 years of age, and none of the respondents was over 50 years old. The majority of respondents (80 percent) were public sector employees, while 16.7 percent were university students and 3.3 percent were employed in the private sector. Most of the respondents spent more than 8 hours per week using the internet. This may indicate that the number of focus groups comprised of people with regular access to the internet was greater than those who did not use the internet regularly. Of the respondents, 6.7 percent used the internet for 1-3 hours per week, 26.7 percent used it for 4-8 hours, 46.7 percent used the internet for more than 8 hours, and 20 percent used the internet for less than 1 hour. Ninety percent of respondents held a bachelor's degree or equivalent level of education, while 6.7 percent held a higher level of education. The respondents who held a diploma level of education represented the lowest percentage, 3.3 percent. None of the respondents held only a high school level of education. Amongst respondents, 20 percent used the internet at university, 20 percent used it at home, and 6.7 percent used it at internet cafés. The largest percentage, 53.3 percent, used the internet at work. Of the respondents, 74.3 percent used the internet for email and chatting purposes, 16.3 percent used it for shopping, 13 percent used it for homework or checking results, 86.3 percent used it for reading news, and 23 percent used it for other purposes.

Recruitment procedures
The focus group participants were recruited in two different ways. The first way was by recruiting volunteers within a government agency, with the assistance of a departmental secretary to identify potential participants. The second recruitment method was used for the people who had access to the internet from home or work and for the people who did not access the internet regularly. A research assistant used a snowball sampling method by contacting one participant who, in turn, referred other participants, and so on. The research assistant only contacted participants with the relevant target characteristics.

Once the participants had been recruited for each focus group interview, the researcher was able to conduct the focus group interviews by utilising the NGT (Delbecq *et al.*, 1975; Van De Ven and Delbecq, 1974). The participants were asked different questions to sustain their understandings about e-government in Jordan. These questions are "What are the main advantages in providing government services online through government websites to citizens?", "From your experience, what are some of reasons why Jordanian citizens would not use e-government services?", "In your opinion, in what ways could religious views limit the fill usage of internet including e-government websites?", "What beliefs of the people in Jordan about the internet would make the adoption of e-government difficult? Could you please give me an example?", "In what way do you think the social life in Jordan would influence the adoption of the e-government?", and "What are your views on e-government adoption in Jordan?".

Focus group analysis
In order to explore how different social factors might influence e-government adoption by Jordanian people, the participants' responses were analysed, and the codes emerged from the participants' responses. Two types of analysis were followed these are preliminary data analysis, which was conducted during the data collection stage and the data analysis strategy used in the final analysis stage, which includes

coding the focus group interview flip chart, eliminating recurring codes and assigning appropriate categories for the identified codes.

Preliminary data analysis

A preliminary data analysis was conducted during the data collection at the focus group meetings. Merriam (1989) observes that "the right way to analyze data in qualitative research is to do it simultaneously with data collection". Preliminary data analysis was conducted simultaneously in different ways. The first method was by conducting the preliminary analysis during the focus group meetings. In this way, the participants were involved in creating the codes during the process of the NGT. The participants were asked to provide their responses on the flip chart as short sentences or a couple of words. This was followed by discussions with the group in order to finalise a decision regarding the words used in any response or code by checking their reflection of the required meaning. The other way of conducting the preliminary analysis was that sufficient time was allocated for reviewing the meeting transcripts and the flip charts with members of the group. The purpose of this phase is to clarify any ambiguity in participants' answers that were identified in the flip chart during the focus group meeting. The preliminary analysis assists to develop protocols for other focus group meetings. The preliminary analysis helped to remember and recollect details of the data. Therefore, a general view about codes and categories of data was created. The coding and categorisation are emphasised in the second phase of analysis, the data analysis strategy.

Moreover, the preliminary analysis included the translation process for the flip chart. The contents of the flip chart were translated from Arabic to English and then from English to Arabic. In this way, the consistency of both drafts of the flip chart, Arabic and English, was ensured. After ensuring consistency, the English draft of the flip chart was revised.

Data analysis strategy: coding and categorising

The data analysis strategy includes two main methods: the coding and the categorisation of the collected data. Coding the data involves formulating data into understandable small units of information. Categorisation purposes to group the different codes within different categories. The following paragraphs give more insights into the method used in analysing the qualitative data collected by providing a clear depiction of the analysis strategy.

Although the NGT assisted in formulating the codes during the focus group meetings, the recording of audio-taped groups was reviewed to refine a number of the codes listed in the flip chart. Accordingly, some of the responses (codes) listed in the flip chart were refined to be more applicable in general to the research questions and objectives and in particular to the research factors literature and theoretical background reviewed in this research. Also, some of the codes composed of long sentences were shortened for easier handling.

Two methods were utilised of cycle coding, beginning with initial coding (first cycle) and closing with axial coding (second cycle) (Saldaña, 2009; Strauss, 1987). The data coded through the first cycle of initial coding are further analysed in the second cycle of coding.

Saldaña (2009, p. 149) declares that "Second Cycle coding methods, if needed, are advanced ways of recognizing and reanalyzing data coded through First Cycle methods". This study used axial coding that "extends the analytic work from initial coding and,

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to some extent, focused coding" (Saldaña, 2009, p. 159). Axial coding links and/or clusters the sub-categories in core categories (Strauss, 1987). Throughout the categorisation process of axial cycle coding, the data coded is organised into related units of information. The categorisation process was conducted for each question at a time.

Findings and discussion

The discussion highlights the important themes influencing e-government adoption in Jordan. These themes are summarized in Table III with their related groups. These themes were in response to the questions listed earlier in this paper in the sub-section "recruitment procedure".

Relative advantage

The focus groups revealed that relative advantage is one of the themes that assist in understanding the e-government adoption in Jordan. Different sub-themes have been combined to formulate the relative advantage theme such as "resource usage efficiency" and "accuracy of transaction". Commenting on the theme of "resource usage efficiency", the participants of Groups 1-4 indicates that e-government is a good approach to assist Jordanian citizens to save not only their time but also their money. To illustrate, one group one participant mentioned that: "By launching government services online, there is no need to visit the government agencies physically in order to carry out the different paper-based transactions". Thus, citizens could save time, effort and money. Commenting on one of these advantages, save time and money, that might be a reflection of actual issues within the social community in Jordan, such as low levels of income. The low level of income in Jordan leads Jordanians to explore different approaches that enable them to reduce their expenses in conducting transactions. The participants in the focus group interviews mentioned that using e-government would reduce paperwork and its related expenses. This could be related to the strong representation of public servants (80 percent) in the sample, as public servants usually deal with significant amounts of paperwork as part of their jobs. "Accuracy of transactions" is another sub-theme designed based in the perception that were obtained from the participants of Groups 4 and 5. The participants indicated that e-government services provide greater accuracy of information provided to the citizens or accuracy of processing transactions.

Trust in the internet and the importance of internet and computer skill confidence

The data collected from the five focus groups revealed different themes that assist in understanding the reasons that might lead Jordanians to not use

Theme	Group
Relative advantage	Groups 1-5
Trust in internet in terms of security and privacy	Groups 1, 3 and 5
Internet and computer skills	Groups 2-4
Digital divide	Groups 1, 2, 4, 5
Religious views	Groups 1-5
Wasta (favouritism)	Groups 1-3
Resistance to change	Groups 1 and 5
WOM	Group 1

Table III.
Focus group themes

e-government services. The two main themes are mistrust in terms of security and privacy; and computer and internet illiteracy.

The participants of Groups 1, 3, and 5 indicated two main types of mistrust: mistrust of the internet as a channel by which to interact with the government, and mistrust of e-government as a new technology. The participants' concerns about mistrust can be summarized as mistrust of electronic transactions; mistrust in terms of privacy, such as misuse of personal details, especially bank details; and mistrust in terms of security, such as hacking. One participant of Group 1 indicated that "people in Jordan would not conduct their transaction with government online through websites due to their fears about misuse of their personal information". Another participant from Group 3 mentioned that "lack of IT infrastructure might lead people in Jordan to not trust the existing security systems used by government therefore doubting government ability to secure their information". These findings are in line with previous studies that show that trust in the internet in terms of security and privacy is a significant predictor of e-government adoption in developed and developing countries (Carter and Bélanger, 2005; Chang *et al.*, 2005; Gilbert and Balestrini, 2004; Phang *et al.*, 2005). This paper emphasized the importance of addressing the issue of trust in internet to have further understandings for the e-government adoption by citizens in Jordan by using a qualitative approach. However, the aforementioned studies have been conducted based on quantitative survey based approach.

In regard to the internet and computer illiteracy, the participants of Groups 2-4 emphasized the importance of having the required internet and computer skills to interact with e-government web sites. They also stated that some people in Jordan do not have the required skills to use a computer or the internet, which makes their interaction with the government through the web site difficult. One of the participants in Group 2 indicated that that "interaction with government through websites requires different skills such as website navigation that some people in Jordan do not have". The main reason behind raising this issue can be clarified by the low levels of PC penetration and insufficient internet access which have been highlighted as some factors that adversely affect the advancement of the ICT capabilities of Jordanians (MOICT, 2006a). The *Global Information Technology Report* (2010) shows that Jordan has a relatively low internet bandwidth, ranked 68 among 133 countries in the world. Moreover, the low average GDP per capita in Jordan is a significant reason for the lower level of PC penetration and internet access, as well as for high PC costs and internet prices (MOICT, 2006a). Jordan has been ranked 75 among 133 countries with respect to the number of personal computers per 100 of the population (World Economic Forum, 2010). Welch and Hinnant (2003) show the importance of internet and computer skills to citizens' satisfaction not only with e-government but also with the government in general. Also, previous studies illustrated the significant role that the internet and computer skill confidence plays in predicting e-government adoption (Bélanger and Carter, 2006; Carter and Weerakkody, 2008; Wangpipatwong *et al.*, 2008). This study assists in highlighting the importance of having the required internet and computer skills to e-government usage by citizens in Jordan.

Digital divide

The data collected from the focus group interviewees highlights the issue of the digital divide as one of the reason reasons why Jordanians do not use e-government services. The opinions of participants indicate that Jordanians experience the digital

divide in different ways and these include internet accessibility, geography (region), and income (financial ability), and gender bias. Of note, is that 52 percent of participants indicated that they only access the internet at work, highlighting one aspect of the digital divide where citizens do not have home access to the internet. Al-Omari (2006) mentions that the digital divide exists in Jordan in terms of geography, age, skills, gender and income.

The data also illustrates the digital divide from different perspectives: technology infrastructure, geographical bias, and financial ability. The participants of Groups 2, 4 and 5 illustrate the "lack of technology infrastructure" and geographical bias by reporting that internet is not accessible to all home-based users and the difficulty of linking some regions in Jordan to the required services to use the internet, such as phone lines. Technological infrastructure was identified as one of the challenges that would influence the implementation of e-government initiatives in Jordan (Abu-Samaha and Abdel Samad, 2007; Al-Omari, 2006; Elsheikh and Cullen 2008; MOICT, 2006a). Al-Omari (2006) mentions that most of the internet users in Jordan are clustered in three main cities: Amman, Irbid and Zarqa, which leads to a large percentage of areas in Jordan having low levels of ICT services available. According to the Department of Statistics (2006), the approximate number of people who live outside of these three cities in the year 2010 was 1,747,100 which represents 28.5 percent of the total population.

In respect to financial ability, the interviewees of Groups 1 and 2 mentioned that cost of e-government is one of the factors related to e-government adoption in Jordan. Participants of Group 1 mentioned that:

> A low level of income and financial issues restricted them in connecting to the required services in order to use the website, such as phone or internet services and paying connection fees or monthly subscriptions.

Therefore, the data collected indicates that the cost of these services might represent an obstacle for some Jordanian individuals and families, as they could have some financial issues due to the low level of income. The participants clarified the issue by pointing to the difficulty some people in Jordan may have paying monthly subscription fees for internet services. Most of the people in Jordan who have low income levels will limit their expenditure to meet necessary requirements. Jordan experiences difficulties in strengthening its PC penetration and internet access because of its lower level of average GDP per capita (MOICT, 2006a). Jordan has been ranked 140 in comparison to the world with respect to GDP per capita with estimated value $5,900 (CIA, 2008). Also, the *E-readiness report* states that 89 percent of the stakeholders of the Jordan *E-readiness Assessment Perception Survey* reported that high PC costs and internet prices are the most important barriers to increasing PC and internet penetration in Jordan (MOICT, 2006a).

The digital divide is one of the issues this research focused on by examining its influence on e-government adoption in Jordan. Gender bias (male and female) was explained by participants from Group 5 who stated that females are unable to use the internet in internet cafés. Some participants mentioned that this might refer to the nature of internet cafés, where some cafés are enclosed places that encourage interaction between males and females. Mixing between males and females in such settings is normally discouraged by Muslim religious tradition.

The digital divide was reported as one of the main challenges facing e-government in Jordan (reference). This research affirms previous studies that verified the important

role of the digital divide in predicting e-government adoption by citizens (Bélanger and Carter, 2009; Reddick, 2005; Thomas and Streib, 2003). This study offered a depth investigation of digital divide issue and its relation with e-government by obtaining the perception of citizens who explained the digital divide within different terms such as female restrictions on using internet cafes, lack of home internet accessibility due to infrastructure restrictions and lower income.

Religious views
This section investigates religious views by presenting different sub-themes such as religious immorality issues, religious encumbrances, and misinterpretation of internet usage. The participants from Group 4 mentioned that internet usage could be limited by the existence of "immorality issues" that appear on some adult web sites. The group participants stated that the matter of immorality could limit internet connection from homes. Thus, people would prefer not to use the internet where there is a risk that they, or family members, may be exposed to adult sites. The data collected from the focus groups indicates the important role that religious encumbrances play on influencing internet usage and, therefore, e-government adoption in Jordan. Groups 4 and 5 explained religious encumbrances as it is related more to the issues that tend to promote incorrect information about religion and which, in turn, may influence people's opinions, especially those of the younger generation. Religious teaching may be "polluted" by incorrect presentations on religious topics. In previous quantitative survey-based studies conducted by Alomari *et al.* (2009a, 2010) and Alomari *et al.* (2009b) in the same context, Jordan, the authors found that beliefs, including religion, are a significant component related to e-government adoption in Jordan and immorality issues were used as one of the scale items to measure the factor of "beliefs".

The introduction section in this research paper indicates that e-government is Western-made technology, which is more compatible with the social and cultural life of Western countries. Religion was identified as one of the cultural factors that should be taken into consideration when implementing the different e-government initiatives in Jordan (Elsheikh and Cullen, 2008). The literature demonstrates that the internet in Arabic countries presents issues, including religion, which have a greater weight there than they do elsewhere (Hofheinz, 2005; Norton, 2002). Religion is considered to be one of the factors that influences IT transfer and offline communities in the Arabic countries (Hill *et al.*, 1998). Also, the literature highlights the significant role of religious beliefs in determining IT and e-government adoption (Dimitrova and Beilock, 2005; Evans and Yen, 2005; Leonard *et al.*, 2004). Thus, the findings here expand previous research on religious objections to internet access by highlighting the fear of viewing immoral images and the dissemination of incorrect religious teaching.

Resistance to change
The focus group interviewees showed that resistance to change is one of the themes that should be considered when addressing the issue related to the adoption of e-government in Jordan. The participants from Groups 1 and 5 mentioned that resistance to change is based on a real desire to maintain traditional procedures in completing transactions. A participant from Group 1 indicated that some personal decisions regarding the fear of losing a job or position of power may affect the process of moving online to conduct transactions. Resistance to change has been found as one of the main challenges facing

e-government adoption and implementation in Jordan (MOICT, 2006b). Stakeholders' resistance to change was listed as one of the risks involved in implementing e-government in Jordan and it had a high probability and impact ranking score (MOICT, 2006a, b). Our findings are not in line with Sathye's (1999) research in relation to internet banking. The author found that resistance to change has not been found not to have a significant relationship with internet banking adoption (Sathye, 1999). The inconsistency between the two studies might refer to the different function of e-government and internet banking systems.

Wasta (favouritism) and WOM

The data from the focus groups revealed that social life in Jordan would influence e-government adoption in different ways. In summary, these are *Wasta* (favouritism) and WOM. *Wasta* can be clarified as an Arabic term meaning favouritism. The participants were mostly employees chosen from government agencies. These employees may be more susceptible to *Wasta*, as they are working to governmental entities that have a large customer base. The participants of Groups 1-3 mentioned that most of the people in Jordan are used to conducting and finalising their transactions based on their interpersonal relationships. The participants continued by saying that the adoption of e-government would be slow by those people, as they prefer paper-based work, which facilitates their access to the people who are in key positions to take favourable decisions regarding their transactions. The literature finds that there is a lack of studies which empirically examine the influence of *Wasta* on technology usage in general and e-government usage in particular (AlAwadhi and Morris, 2009). This study has further highlighted the role of *Wasta* in both encouraging and restricting e-government adoption, based on participant's personal preferences for face to face versus online interactions. Further research is needed to explore the extent of the influence of *Wasta* on e-government adoption.

WOM is also one of the themes that composed based on the perceptions held by about how social life in Jordan would influence the adoption and usage of e-government by citizens in Jordan. The participants of Group 1 exchange their experiences in a way that influences their decisions. The discussion around "WOM" began with a participant who stated that some people in Jordan rely on the past experiences of others. Then, some participants of the group mentioned that negative past experiences of using such online services by some people in Jordan would negatively influence the decision of others to use the same services. The literature shows the lack of research that addresses the issue of WOM in relation to the adoption of technological systems in general and e-government in particular. Yet, Kim and Prabhakar (2000) provided an attempt to understand the relationship between WOM and adoption of one of the technological systems that is internet banking. The authors stated that there is an intermediate influence exists between WOM and the adoption of internet banking. This research help in identifying in what way the WOM would influence the adoption of e-government.

The significance of these two factors can be explained by collectivism, one of the cultural dimensions discussed by Hofstede (2009) mentioned identified in the introduction section of this paper. Hofstede (2009) mentioned that most of the Arabic societies are collectivist in nature because of the strong commitment that the group has such as family or extended relationships. Jordan is one of the Arabic countries where individuals demonstrate their commitment and trust in the group they belong to in different forms such as offering them help and support that would not otherwise be available.

Finally, this study offers a clear presentation for factors need to be considered when investigating the adoption of e-government. It outlines factors in addition to some factors identified in previous research (Carter and Bélanger, 2005) to obtain a constructive understanding for e-government adoption in a developing country such as Jordan. These factors are listed in Table IV.

These factors such as religious views, digital divide, *Wasta*, WOM, and resistance to change delineate the necessity of designing a refined model of e-government adoption that suit social and cultural dynamic of developing countries in general and Middle Eastern countries in particular such as Jordan.

Research implications

This study shows the significant role of *Wasta* on e-government adoption by Jordanians. The government in Jordan should introduce e-government as an approach to eliminate the progress of *Wasta* and therefore more fairness can be committed with respect to processing applications and not allowing people who have personal connections to "jump the queue".

Our findings highlight the role of WOM as a traditional way of communication between individuals within communities to connect with e-government. Yet, recently people interact also through virtual communities via different web sites such as Facebook, Twitter, and blogs. Therefore, the government in Jordan should consider

Factors (How do these factors influence e-government adoption?)	Limitations on e-government adoption
Trust in the internet	Mistrust in terms of security
	Mistrust in terms of privacy
Religious views	Immorality issues
	Religious encumbrances
	Misinterpretation of internet usage
Internet and computer skills confidence	The importance of having the right level of the internet and computer skills and awareness to interact with e-government services through different channels mainly web sites
Digital divide	Internet accessibility divide
	Geographical (region) divide
	Income (financial ability) divide
	Gender bias divide
WOM	Citizens make decisions on using e-government services based on others people's experiences
	These experiences are communicated by WOM
Wasta (favouritism)	Some citizens conduct and finalize their transactions based on their interpersonal relationships
	Some people prefer paper-based transactions, as they facilitate their access to the people who are in key positions to take favourable decisions regarding their transactions
Resistance to change	Some citizens desire to maintain traditional procedures in completing transactions
	Personal decisions regarding the fear of losing a job
	Personal decisions regarding the fear of position of power
Relative advantage	Resource usage efficiency
	Accuracy of transaction

Table IV.
Main findings from
focus groups

utilizing social networking applications such as Facebook to leverage the power of WOM by advertising about e-government advantages and success stories to increase Jordanians awareness and interest, especially the internet users, about e-government.

Our findings such as digital divide and WOM were reported based on combination of data collected and analyzed from Jordanian people who have and do not have regular access to the internet. This research potentially assists the government in Jordan to address the perceptions, needs, and expectations of these two groups of people about e-government and check the similarities between them to design the applicable strategies that ensure an equal participation of the entire population in Jordan with e-government.

Limitations and future research

The current research paper explored social perceptions of e-government in general using qualitative methods. Future research should focus on social perceptions of particular e-services provided by the government of Jordan. This research was conducted with participants who live in the two main cities of Jordan and did not include participants from smaller rural cities; therefore future research should include participants from different cities in Jordan for more a comprehensive study.

To sustain a further and a comprehensive understanding of e-government adoption in Jordan, future explicit quantitative research should be conducted to explore the influence of the eight factors identified through the current research paper. A survey could be administered to different groups in the Jordanian community, using two comparative governmental departments, to ascertain their perceptions about e-government usage.

Conclusion

This study offered analysis and discussion of data obtained from five focus groups conducted in Jordan. The focus groups were comprised of a sample from citizens who had regular access to the internet and those who had irregular access to the internet. Using the NGT, the focus group interviews aimed to explore people's understanding of the main factors influencing e-government adoption in Jordan. The data was analysed by performing both coding and categorisation. The findings and its related discussion revealed the different significant factors that assist to obtain further understandings for e-government adoption in Jordan, these are relative advantage; trust in terms of security and privacy; the digital divide; religious beliefs; *Wasta* (favouritism); resistance to change; and WOM.

References

Abu-Samaha, A.M. and Abdel Samad, Y. (2007), "Challenges to the Jordanian electronic government initiative", *Journal of Business Systems, Governance and Ethics*, Vol. 2 No. 3, pp. 101-109.

AlAwadhi, S. and Morris, A. (2009), "Factors influencing the adoption of e-government services", *Journal of Software*, Vol. 4 No. 6, pp. 584-590.

Al-Omari, H. (2006), "E-government architecture in Jordan: a comparative analysis", *Journal of Computer Science*, Vol. 2 No. 11, pp. 846-852.

Alomari, M.K., Sandhu, K. and Woods, P. (2009a), "E-government adoption in the Hashemite Kingdom of Jordan: factors from social perspectives", paper presented at the 4th International Conference for Internet Technology and Secured Transactions, London, UK.

Alomari, M.K., Sandhu, K. and Woods, P. (2010), "Measuring social factors in e-government adoption in the Hashemite Kingdom of Jordan", *International Journal of Digit Society* (*IJDS*), Vol. 1 No. 2, pp. 163-172.

Alomari, M.K., Woods, P. and Sandhu, K. (2009b), "The deployment of e-government in the Hashemite Kingdom of Jordan: factors in e-government adoption", paper presented at the IADIS International Conference WWW/INTERNET, Rome, Italy.

Alomari, M.K., Woods, P. and Sandhu, K. (2012), "Predictors for e-government adoption in Jordan: deployment of an empirical evaluation based on a citizen-centric approach", *Information Technology & People*, Vol. 25 No. 2, pp. 207-234.

Al-Saggaf, Y. (2004), "The effect of online community on offline community in Saudi Arabia", *The Electronic Journal on Information Systems in Developing Countries*, Vol. 16 No. 2, pp. 1-16.

Al-Shafi, S. and Weerakkody, V. (2008), "Adoption of wireless internet parks: an empirical study in Qatar", paper presented at the European and Mediterranean Conference on Information Systems, Dubai, UAE.

Arndt, J. (1967), "Role of product-related conversations in the diffusion of a new product", *Journal of Marketing Research*, Vol. 4 No. 3, pp. 291-295.

Bélanger, F. and Carter, L. (2006), "The effects of the digital divide on e-government: an empirical evaluation", paper presented at the 39th Hawaii International Conference on System Sciences IEEE, Hawaii, USA.

Bélanger, F. and Carter, L. (2009), "The impact of the digital divide on e-government use", *Communications of the ACM*, Vol. 52 No. 4, pp. 132-135.

Carter, L. and Bélanger, F. (2005), "The utilization of e-government services: citizen trust, innovation and acceptance factors", *Information Systems Journal*, Vol. 15 No. 1, pp. 5-25.

Carter, L. and Weerakkody, V. (2008), "E-government adoption: a cultural comparison", *Information Systems Frontiers*, Vol. 10 No. 4, pp. 473-482.

Chang, I.C., Li, Y.-C., Hung, W.-F. and Hwang, H.-G. (2005), "An empirical study on the impact of quality antecedents on tax payers' acceptance of internet tax-filing systems", *Government Information Quarterly*, Vol. 22 No. 3, pp. 389-410.

CIA (2008), "The world fact book: Jordan", Central Intelligence Agency, available at: www.cia.gov/library/publications/the-world-factbook/geos/jo.html#Govt (accessed 27 June 2008).

Coghlan, D. (1993), "A person centred approach to dealing with resistance to change", *Leadership & Organization Development Journal*, Vol. 14 No. 4, pp. 10-14.

Cunningham, R.B. and Sarayrah, Y.K. (1993), *Wasta: Hidden Force in Middle Eastern Society*, Praeger, Westport, CT.

Cunningham, R.B. and Sarayrah, Y.K. (1994), "Taming *Wasta* to achieve development", *Arab Studies Quarterly*, Vol. 16 No. 3, pp. 29-41.

Deakins, E., Caves, A. and Dillon, S.M. (2001), "Issues of e-government in the United States", *Department of Management Systems Working Paper Series*, Vol. 1 No. 1, p. 23.

Delbecq, A.L., Van de Ven, A.H. and Gustafson, D.H. (1975), *Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes*, Scott, Foresman, Glenview, IL.

Dimitrova, D.V. and Beilock, R. (2005), "Where freedom matters", *The International Journal for Communication Studies*, Vol. 67 No. 2, pp. 173-187.

DOS (2006), "Jordan in figures", Department of Statistics, available at: www.dos.gov.jo/dos_home_e/main/index.htm (accessed 12 May 2012).

Dugdale, A., Daly, A., Papandrea, F. and Maley, M. (2005), "Accessing e-government: challenges for citizens and organizations", *International Review of Administrative Sciences*, Vol. 71 No. 1, pp. 109-118.

Elsheikh, Y. and Cullen, A. (2008), "E-government in Jordan: challenges and opportunities", *Transforming Government: People, Process and Policy*, Vol. 2 No. 2, pp. 83-103.

Evans, D. and Yen, D.C. (2005), "E-government an analysis for implementation: framework for understanding cultural and social impact", *Government Information Quarterly*, Vol. 22 No. 3, pp. 354-373.

Feghali, E. (1997), "Arab cultural communication patterns", *International Journal of Intercultural Relations*, Vol. 21 No. 3, pp. 345-378.

Gilbert, D. and Balestrini, P. (2004), "Barriers and benefits in the adoption of e-government", *The International Journal of Public Sector Management*, Vol. 17 No. 4, pp. 286-301.

Hill, C.E., Loch, K.D., Straub, D.W. and El-Sheshai, K. (1998), "A qualitative assessment of Arab culture and information technology transfer", *Journal of Global Information Management*, Vol. 6 No. 3, pp. 28-38.

Hofheinz, A. (2005), "The internet in the Arab world: playground for political liberalization", *International Politics and Society*, Vol. 3 No. 1, pp. 78-96.

Hofstede, G. (2001), *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, Sage, Thousand Oaks, CA.

Hofstede, G. (2009), "Geert Hofstede cultural dimensions", available at: www.geert-hofstede.com/hofstede_arab_world.shtml (accessed 23 April 2010).

Hutchings, K. and Weir, D. (2006), "Guanxi and *Wasta*: a comparison", *Thunderbird International Business Review*, Vol. 48 No. 1, pp. 141-156.

Kim, K. and Prabhakar, B. (2000), "Initial trust, perceived risk, and the adoption of internet banking", paper presented at the 21st International Conference on Information Systems, Brisbane, Australia.

Leonard, L.N.K., Cronan, T.P. and Kreie, J. (2004), "What influences IT ethical behavior intentions – planned behavior, reasoned action, perceived importance, or individual characteristics?", *Information & Management*, Vol. 42 No. 1, pp. 143-158.

Loges, W.E. and Jung, J.-Y. (2001), "Exploring the digital divide: internet connectedness and age", *Communication Research*, Vol. 28 No. 4, pp. 536-562.

Makhoul, J. and Harrison, L. (2004), "Intercessory *Wasta* and village development in Lebanon", *Arab Studies Quarterly*, Vol. 26 No. 3, pp. 25-41.

Merriam, S. (1989), *Qualitative Research and Case Study Application in Education*, Jossey-Bass, San Francisco, CA.

MOICT (2006a), "E-readiness assessment of the Hashemite Kingdom of Jordan", Ministry of Information and Communications Technology, available at: http://moict.gov.jo/MoICT/MoICT_Jordan_ereadiness.aspx (accessed 16 April 2009).

MOICT (2006b), *Jordan E-Government Program: E-Government Strategy*, Ministry of Information and Communications Technology, available at: http://moict.gov.jo/e_gov_strategy/e-Government%20Strategy.pdf (accessed 12 April 2009).

Morgan, D.L. (1996), "Focus groups", *Annual Review of Sociology*, Vol. 22, pp. 129-152.

Morgan, D.L. (1997), *Focus Groups as Qualitative Research*, Sage, Thousand Oaks, CA.

Norton, L. (2002), "The expanding universe: internet adoption in the Arab region", available at: www.worldmarketsanalysis.com/InFocus2002/articles/middleeast_internet.html (accessed 17 October 2007).

Ojha, A., Sahu, G.P. and Gupta, M.P. (2009), "Antecedents of paperless income tax filing by young professionals in India: an exploratory study", *Transforming Government: People, Process and Policy*, Vol. 3 No. 1, pp. 65-90.

Oostveen, A. and Besselaar, P.V. (2004), "Internet voting technologies and civic participation: the users' perspective", *The Public*, Vol. XI No. 1, pp. 61-78.

Phang, C.W., Sutanto, J., Li, Y. and Kankanhalli, A. (2005), "Senior citizens' adoption of e-government: in quest of the antecedents of perceived usefulness", paper presented at the 38th Hawaii International Conference on System Sciences, Hawaii, USA.

Pons, A. (2004), "E-government for Arab countries", *Journal of Global Information Technology Management*, Vol. 7 No. 1, pp. 30-46.

Reddick, C.G. (2005), "Citizen interaction with e-government: from the streets to servers?", *Government Information Quarterly*, Vol. 22 No. 1, pp. 38-57.

Rogers, E.M. (1983), *Diffusion of Innovations*, The Free Press, New York, NY.

Saldaña, J. (2009), *The Coding Manual for Qualitative Researchers*, Sage, London.

Sathye, M. (1999), "Adoption of internet banking by Australian consumers: an empirical investigation", *International Journal of Bank Marketing*, Vol. 17 No. 7, pp. 324-334.

Schaupp, L.C. and Carter, L. (2005), "E-voting: from apathy to adoption", *The Journal of Enterprise Information Management Science*, Vol. 18 No. 5, pp. 586-601.

Strauss, A.L. (1987), *Qualitative Analysis for Social Scientists*, Cambridge University Press, Cambridge.

Thomas, J.C. and Streib, G. (2003), "The new face of government: citizen-initiated contacts in the era of e-government", *Journal of Public Administration Research and Theory*, Vol. 13 No. 1, pp. 83-102.

Van De Ven, A.H. and Delbecq, A.L. (1974), "The effectiveness of nominal, delphi, and interacting group decision making processes", *Academy of Management Journal*, Vol. 17 No. 4, pp. 605-621.

Van Dijk, J.A.G.M. (2006), "Digital divide research, achievements and shortcomings", *Poetics*, Vol. 34 Nos 4/5, pp. 221-235.

Vassilakis, C., Lepouras, G., Fraser, J., Haston, S. and Georgiadis, P. (2005), "Barriers to electronic service development", *e-Service Journal*, Vol. 4 No. 1, pp. 41-63.

Wangpipatwong, S., Chutimaskul, W. and Papasratorn, B. (2008), "Understanding citizen's continuance intention to use e-government website: a composite view of technology acceptance model and computer self-efficacy", *The Electronic Journal of e-Government*, Vol. 6 No. 1, pp. 55-64.

Welch, E.W. and Hinnant, C.C. (2003), "Internet use, transparency, and interactivity effects on trust in government", paper presented at the 36th Hawaii International Conference on System Sciences, Hawaii, USA.

Westbrook, R.A. (1987), "Product/consumption-based affective responses and post purchase processes", *Journal of Marketing Research*, Vol. 24 No. 3, pp. 258-270.

Whiteoak, J.W., Crawford, N.G. and Richard, H.M. (2006), "Impact of gender and generational differences in work values and attitudes in an Arab culture", *Thunderbird International Business Review*, Vol. 48 No. 1, p. 77.

World Economic Forum (2010), "The global information technology report", available at: www.networkedreadiness.com/gitr/main/fullreport/index.html (accessed 15 April 2010).

Zander, A.F. (1950), "Resistance to change-its analysis and prevention", *Advanced Management*, Vol. 4 No. 5, pp. 9-11.

Further reading

Aladwani, A.M. (2003), "Key internet characteristics and e-commerce issues in Arab countries", *Information Technology and People*, Vol. 16 No. 1, pp. 9-20.

Van Dijk, J. (1999), *The Network Society: Social Aspects of New Media*, Sage, Thousand Oaks, CA.

Van Dijk, J. and Hacker, K. (2003), "The digital divide as a complex and dynamic phenomenon", *The Information Society*, Vol. 19 No. 4, pp. 315-326.

Waddell, D. and Sohal, A.S. (1998), "Measuring resistance to change: an instrument and its application", Working Paper 62/98, Monash University, Melbourne.

Welch, E.W., Hinnant, C.C. and Moon, M.J. (2005), "Linking citizen satisfaction with e-government and trust in government", *Journal of Public Administration Research and Theory*, Vol. 15 No. 3, pp. 371-391.

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