Demographic Factors as Determinants of E-Governance’ Adoption: A Field Study in the United Arab Emirates (UAE)

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DEMOGRAPHIC FACTORS AS DETERMINANTS OF E-GOVERNANCE’ ADOPTION: A FIELD STUDY IN THE UNITED ARAB EMIRATES (UAE)

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Abstract
Purpose – The purpose of this study is to measure the impact of demographic factors as determinants of citizens’ perceptions toward two dimensions of e-governance, namely: E-Openness & E-Participation.

Design/methodology/approach - A questionnaire was administered to collect data from three locations in the United Arab Emirates. Demographic data was analyzed to test two dimensions, namely: e-openness and e-participation of e-governance underpinning 5 demographic variables. More specifically t-test and the Scheffe method of multiple comparisons were conducted on a sample of 1500 respondents to measure the significance of gender, age, educational level, nationality, and type of employment in relation to the aforementioned dimensions of e-governance

Findings – Findings indicate that, with the exception of nationality, all other demographic variables including gender, age, education, and type of employment clearly explain differences among the respondents of e-governance. Furthermore, our findings suggest that respondents perceive moderate satisfaction with one dimension, namely, e-openness, but less satisfaction with the other dimension, namely: e-participation.

Research limitations/implications - The study is limited by the exclusive emphasis of the influence of 5 independent demographic factors on only two dimensions of e-governance. In addition, the sample represents highly educated and experienced respondents of internet use and thus the results might be biased. Future studies may look beyond the demographic variables by evaluating UAE citizens’ attitudes and behavior towards the adoption of e-services. Furthermore, future research could be an in-depth examination, through focus groups, of the factors that impede an active interaction in UAE. In order to overcome the possibility of biasness of the results, future work should include nonusers and comparing the adoption behavior of online and offline users.

Practical implications - The key findings are useful for policymakers and decision makers for a real understanding of the needs of the citizens and to re-conceptualize the government websites as an interactive channel of communication in enhancing transparency and participation and therefore to contribute to democratic process.

Originality/value – The primary value of this research lies in extending the understanding of citizens’ perceptions of two dimensions of e-governance according to their demographic attributes. The two dimensions of e-governance identified in this study are neither studied before in the context of Arab countries nor explored in relation to the identified demographic variables. Furthermore, this study combines the two dimensions (e-openness and e-participation) and is in contrast with previous studies which examined these two dimensions separately

Keywords: e-Governance, e-openness, e-participation, e-Government, Citizens, Perceptions, United Arab Emirates

Paper type: Research paper
Introduction

E-government and e-governance can be regarded as two separate terms. E-government is an institutional approach that focuses on carrying out decisions related to service provision whose ultimate aim is creating a more satisfied picture of government business processes. E-governance is a wider concept that embraces the relationship between government employees, elected or appointed, and the wider society. It defines and assesses the impact of technologies on the practices of civil servants and the relationships between them and the wider society (Sheridan & Riley, 2006). As interpreted by Heeks (2001) e-governance goes beyond simple service provision and builds interaction with the diverse stakeholders of government through the integration of people, processes, information and technology. The resulting benefits can be diverse and long lasing such as, among others, reduced corruption, greater convenience, citizen empowerment through access to information, deepening and extending democracy, and more efficient and effective public sector management. However, the success of achieving these benefits depends on how well the citizens who are the targeted users make use of them.

In this paper e-governance is defined as the application of electronic means in the interaction between government and citizens. E-governance is the transformation of knowledge and information from government to citizens about the political process via ICTs application and at the same time to make possible the achievement of active participation of citizens in this process. This definition of e-governance reflects two important dimensions, namely e-openness and e-participation. Based on our search, we found plenty of studies which covered wide range of dimensions of e-governance. These studies have examined dimensions such as e-participation, e-consultation, e-democracy, and e-transparency separately. Most of these studies have been carried out in economically advanced countries (Al Athmay, 2013) and therefore this research adds to the limited pools of studies related to e-governance in Arab countries in general and United Arab Emirates (UAE) in particular. In this study, the Author combined two dimensions of e-governance, namely: e-openness and e-participation and investigated empirically how these two concepts of e-governance are affected by some demographic characteristics from a citizens’ perspective. Specifically, in this paper, the Author attempts to examine some demographic factors as determinants of the adoption of e-governance in United Arab Emirates (UAE). These two dimensions of e-governance are neither studied before in the context of Arab countries and nor explored earlier in relation to some demographic variables. The primary purpose of this study is to analyze and extend knowledge of how demographic characteristics are important determinants of understanding citizen’s perception toward the adoption of e-governance. Apparently to have a successful e-governance system in place, there is a clear need to understand how citizens perceive the use of ICTs as a vehicle to enhance participation in democracy. The specific research questions this study addressed are:
1. How satisfaction with the two dimensions of e-governance (e-openness and e-participation) is affected by demographic characteristics (gender, age, education, nationality, and nature of employment)?

2. What is the overall level of satisfaction with two dimensions of e-governance which can be to the aforementioned demographic characteristics?

**E-Government in United Arab Emirates (UAE)**

The UAE is located in the west coast of the Arabian Gulf. The total land area is approximately 83,600 sq km and population as based on 2013 estimation is to be around 5,473,972 where Emirati consists of only 19% of the total. (UAE, Country Profile, 2013). The UAE is a federation of seven Emirates with the Federal Presidential Absolute Monarchy. The Global Information Technology Report 2010-2011 indicates that UAE leads the MENA region in leveraging ICT for increased economic diversification and competitiveness (European e-Government program, 2012). Currently each emirate has its own e-government portal, initiatives and strategy. A unified federal portal exists, but progress has been slow with little interaction between government agencies (Hamid, the National, 2013). E-government was launched in UAE in 2001 and with aims of transforming all government services and make them available 24 hours/7 days a week. The e-government strategy consists of three main categories, namely: eServices (the provision of high quality electronic services through various channels to meet customer needs), eReadiness (Focusing on strengthening the capacity of federal agencies in terms technology, organization and human resources), and ICT environment (covering organizational factors such as infrastructure and regulatory policies) (Al-Khoury, 2012).

The UAE has progressed very rapidly in e-government implementation World Wide. Regionally and in terms of e-government index and online service index, UAE was ranked second behind only Bahrain respectively (A Athmay, 2013). In global terms the UN e-government readiness report (2012 and 2013) ranked UAE 28th and 25th respectively from 190 countries analyzed in the report. It scored 12th rank on online service index against 190 countries. These imply that major improvements and developments have been during the recent times. Currently, the UAE strives for collaboration and coordinated efforts among the seven emirates which comprises the country to strengthen the unified federal portal in addition to maintaining e-government portal of each emirate (The National, 2013). As part of e-government strategy, the UAE federal government has developed strategic framework for purpose to ensure the alignment e-government strategies of the seven emirates recently eGovernment Transformation Strategic Framework 2011-2013 (Al-Khoury, 2012).
Meaning of E-Governance

E-governance is distinct from e-government. E-government as a concept is narrower than e-governance and deals with the development of online services to citizen, while e-governance is a broader discipline and deals with impact of ICTs having on the practice and administration of governments and the relationships between public employees and the wider society (such as policymakers, non-profit organizations, private businesses and citizen). It marks a fundamental institutional change of the way government operates and transforms its relationship with citizens, businesses and other governments. E-Governance is an integral approach that is not only integrates processes with technologies but also people, management, information systems, and the wider environment with aims of achieving governance objectives (Karantzeni and Gouscos, 2013).

E-governance entails building external interactions (Heeks, 2001), enhancing democracy, improving outcomes for people, ensuring equity of benefits, engaging and interacting with people in way of extending e-democracy and building trust of the political institutions of government (Karantzeni and Gouscos, 2013; Heridan & Riley, 2006; Lenihan 2002; The Gartner Group, 2003). The UNESCO definition (www.unesco.org) is: "E-governance is the public sector’s use of information and communication technologies with the aims of improving information and service delivery, encouraging citizen participation in the decision making process and making government more accountable, transparent and effective. …

E-governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services. E-governance is generally considered as a wider concept than e-government, since it can bring about a change in the way citizens relate and integrate to governments and to each other. The main two objectives of e-governance is first, e-openness where it provides opportunity for citizens to access information and knowledge about the political process and second, to make possible the transition toward an active participation of those citizens in political process.

The Study's Dimensions of E-Governance

E-Governance involves the use of ICT by both the government institutions and civil society to build transparent relationships and promote greater participation in the governance of these institutions (Palvia & Sharma, Source URL: http://www.iceg.net/2007/books/1/1_369.pdf).

The dimensions of E-governance, like those of governance itself, include the transparency of laws and procedures, access to information, direct
participation of citizens in government activities, supporting accountability, and building a collaborative partnership with civil society (Sardi and Milikota, 2002). This section discusses two chosen dimensions of e-governance (E-Openness; and E-Participation) which have been adapted from previous researches.

**E-Openness:**
E-Openness is the major theme of e-governance. It opens the gate for citizens to participate in decision-making processes. Access to government information allows citizens to provide their own ideas and suggestions in forums and on-line community networks. If government Websites are designed carefully, they can be resources to empower citizens, offering greater control of service delivery, providing more visibility of the service workflow and clearer standards for accountability (Reddick, 2011; Gianluca et. al., 2011; Kim et. al., 2005) A high level of transparency can stimulate ethical awareness in public service, ensuring accountability for performance on the part of individuals and organizations (Gianluca et al., 2011; Ndou, 2004).

By e-openness, we mean the ease with which and the extent to which citizens are able to obtain government information electronically. Questions related to this dimensions are: whether the citizens access to e-government website is formally instated, and does this requirement explicitly prescribe a transparent process for requesting and providing these information? Does government Web sites promote two-way communication with the public? Has access to information empowered citizens to the extent of having legal control of service delivery? Does access to information reveal to citizens the service workflow? Do the Websites contain guidelines to facilitate access to site content? E-Openness means the possibilities for the citizens to engage in the policy process through electronic networks. This engagement ranges all the way from public education about parliament, web casting of parliamentary sessions, providing for direct participation using discussion boards, sending elected officials an e-mail related to major policy initiatives, and last but not least to communicates directly with the users through messages and feedback in order to enhance the practice of better accountability and create confidence in whole administrative process.

**E-Participation**
Openness can pave the way for participation of citizens in the political process. It provides meaningful sharing of power with public to reflect growing interdependent (Chun et al., 2010; Kim et. al., 2005). In order to realize the full potentials of e-openness, a citizen-centric approach should be developed by creating a joint website that blends all the services & information from multiple sources and present it to the public as a unified program or policy (Sheridan & Riley, 2006). E-participation means that legitimacy of government institutions is dependent on the level of trust given by citizens and in form of influencing the policy-making process (Reddick, 2011, 2013). E-participation
involves consultation on issues of concern, and the actual citizens’ involvement in government decision making and regulatory administration (Garson, 2006). Without public input, e-governance initiatives are unlikely to attend (Kim and Lee, 2012; Kabani, 2005).

In this paper, satisfaction with e-participation is interpreted to mean the extent to which the users are satisfied with content and proposals available on e-government Web sites: Whether the interactive features of government website are satisfactory or not. Whether the public are satisfied with government comments to their suggestions and whether the government official report back to the public input. Does the internet have been used in posting comments about public policy? Whether the Web sites provides effective functions that deal with my questions, whether websites provide clear information about the importance of my role in the decision making processes.

LITERATURE REVIEW

E-governance goes beyond the processes and structures of delivering electronic services to build external interactions (Heeks, 2001; Reddick, 2011), enhance democracy by providing citizens with information and knowledge about the political process and enabling citizens’ participation in political decision making Lenihan, 2002; Reddick, 2013). Benefits of e-governance are numerous. It can enhance citizen’s trust of e-government services, improving information and services delivery, enhancing the opportunities of active participation in political process as well as creating transparent, accountable and effective government.

When analyzing the existing literature on e-governance, three distinct research streams have been found. The first was focusing on finding the link between ICTs and e-governance (Gianluca et. al., 2011; Rochdi, 2006; Sardi, 2002; Clift, 2004; Heeks, 2001)). The second stream of studies was focusing on measuring the quality of e-governance in some countries (Murad, 2010; Belwal & Al-Zoubi, 2008; Carrizales, 2008; Agrawal et al., 2007; Gilmore, 2006). The third stream of researches involved case studies examining the framework and the status of e-governance in some countries (Al-Athmay, 2013, Madiche & Al Athmay, 2013; Al Athmay; 2012; Kabani, 2005; Backus, 2001). In these studies, attributes related to e-governance were examined separately (Reddick, 2011, 2013; Chun et al., 2010; Kim et. al., 2005; Reddick, 2005; Gianluca et. al., 2011; ) These studies do not factor the effect of these attributes on the citizens perceptions of e-governance. This paper combines two dimensions of e-governance, namely: e-participation and e-openness and examines the impact of demographic characteristics as determinants of citizens’ perceptions toward e-governance as represented by those two dimensions.

Studies on exploring the affect of demographic characteristics in citizens’ attitudes and perceptions toward the adoption of new technology are limited
(Choudrie and Dwivedi, 2005; Choudrie & Papazafeiropoulou, 2006; Dwivedi et al., 2006; Dwivedi & Lal, 2007). Such characteristics have been found to significantly affect citizens’ adoption of e-government services. Choudrie and Dwivedi (2005) examined the citizen’s awareness and adoption of e-government initiatives in the United Kingdom (UK), employing data collected from the households. Findings of this study suggested that demographic characteristics of citizens such as age, gender, education and social class have an imperative role in explaining the citizen’s awareness and adoption of e-government services in the household. Rhee and Kim (2004) examined the influence of socio-demographic factors towards the adoption and use of the Internet in South Korea using data extracted through face-to-face interviews with more than 1000 respondents and they found that the social support from family members has as much effect on the internet users’ perceptions. Other characteristics, such as age, educational, and the perception of the benefits from internet use proved to be significant factors in the internet adoption as well. But income level has no effect on internet adoption.

Singh et al., (2010) examined the potential of e-governance initiatives in reducing the corruption of three countries, namely, India, Ethiopia and Fiji. The study surveyed citizen’s perception of how e-governance could fight corruption in those three countries. The study found that e-governance initiatives, in the perceptions of respondents, positively related to improved government-citizen relationships and corruption reduction. To see how an open government and government 2.0 becomes as new goal and tool of e-government under President Obama Administration, Nam (2011) adopted several factors such as usage intensity, perceived value of e-government, general trust in government as well as socio-demographic characteristics (age, gender, education, income, race) and found that the frequent use of e-government and citizen trust in e-government leads to a direct positive attitudes concerning open government and socio-demographic characteristics have indirect effect on citizens’ attitudes towards the new version of e-government. In assessing the status and challenges of e-governance in Arab countries (Al Athmay, 2013) found that with exception of some Arab countries within the Gulf Cooperating Council like UAE and Bahrain, the majority of them are in the bottom 10% in e-participation. The study also found that factors such as lack of critical evaluation of e-governance initiative, bureaucracy, infrastructure and technical, trust, awareness are among the most cited challenges of the study’s respondents. To understand the critical factors that support and deter the practices of an electronic democracy among the municipal managers, Carrizales (2008) found that factors such as budgetary constraints, form of government, and ideological perspectives are potentially challenge and support the progress of online democratic practices in municipalities.

To further understand, citizen’s attitudes towards e-government and e-governance within a UK context, Kolsaker and Lee-Kelley (2008) collected data from 3000 citizens of a relatively prosperous town in South-East England. Findings indicate that users and non-users perceive moderate value in e-government for knowledge acquisition and communication, but little as a vehicle of democratic engagement. Furthermore, those using e-government
frequently are more positive than those using e-governance. In examining the factors that are associated with the level of citizen satisfaction with government transparency, Jun and Wang (2012) found that younger generation are the most active users of e-government website and free in expressing their opinions related to issues of service delivery compared to older generation. Furthermore, the results indicate that older generation tends to be more satisfied with the transparency of the local government in service delivery. The study of Al-Shafi and Weerakkody (2009), utilized the Unified Theory of Acceptance and Use of Technology (UTAUT) to explore the adoption of e-government services in the state of Qatar. They examined the influence of factors adapted from the UTAUT on citizen’s adoption and usage of the national Qatari e-government services, and they found that facilitating conditions and behavioral intention have influenced citizens’ use of e-government services in Qatar. Furthermore, the study investigated the impact of some demographic characteristics such Age, Gender and Education and found that e-government adoption in the state of Qatar differ significantly in terms of gender, age and education. Colesca & Dobrica (2008) examined the adoption and use of e-government services in Romania based on TAM. Colesca & Dobrica’s research focused on several constructs such as perceived ease of use, usefulness and quality as well as some demographic factors. With regard to perceived ease of use, usefulness and quality, the findings indicate that there a positive impact of these factors on citizen’s satisfaction and the adoption of e-government. Regarding the influence of demographic factors, the study found positive relationship between the level of education attained and the adoption of e-government while is negatively associated with e-government adoption. The study fails to attest the importance of gender and income on e-government’s adoption. A study by Dwivedi and Lal (2007) of the affect of socio-economic determinants on the adoption of broadband, found that socio-economic variables such as gender, age, education, occupation and income significantly helped to explain differences between adopters and non-adopters of new technologies. Dwivedi & Williams (2008) conducted study of the influence of demographic variables on citizens’ adoption of UK e-government initiative, the ‘Government Gateway’ and found that with exception of gender, variables such as age, education and broadband access at home significantly influence citizens’ adoption of the Government Gateway. To understand how e-government transforms public governance in developing countries, a study was conducted by Mwangakala (2012) to examine the impact of demographic characteristics in the citizen’s usage of government websites. The results revealed that age and education level directly affected citizen’s willingness and continuance intention to use government websites, while income level did not have an effect in the citizen’s willingness to use government websites.

**Conceptual Framework and Research Hypotheses**

Based on the above literature, this study proposes the following hypothesis and conceptual model. The proposed model posits that demographic variables (gender, age, level of education, nationality, and type of employment) all have a significant impact on the adoption of e-governance. The following subsections provide descriptions of each variable along with
brief justification for including them in the conceptual model and the associated hypothesis.

**Age**

Several scholars (Morris and Venkatesh, 2000; Venkatesh et al., 2003; Rhee and Kim, 2004; Choudrie and Dwivedi, 2005; Dwivedi and Lal, 2007; Cloesca and Dobrica, 2008; and Al-Shafi and Weerakkody, 2010) have used age as an independent predictor for the usage and adoption of e-government. Choudrie and Lee (2004) found that in South Korea, younger age group has more usage of internet compared to old age group. Carveth and Kretchmer (2002), found that in many Western European countries, the older groups are less likely to use internet compared to the younger group. Other studies such as (Mwangakala, 2012; Dwivedi and Lal, 2007; Cloesca and Dobrica, 2008, and Al-Shafi and Weerakkody, 2010) have reached similar conclusion. To examine the impact of age as independent variable in explaining the differences among the users of e-governance, the researcher proposes the following hypothesis:

H1: There are differences between age groups toward the adoption of the two dimensions of e-governance (e-openness & e-participation).

**Education**

Burgess (1986) argued that those with higher educational qualifications are more likely to have more positive attitudes toward the adoption of innovations. Previous studies on technology suggested a positive correlation between the level of education and technology adoption (Venkatesh et al., 2000). Venkatesh et al, 2000 et al. (2000) found that people with higher level of education used computers more than less educated people. Other Scholars such as (Choudrie and Dwivedi, 2005; Choudrie & Papazafeiropoulou, 2006; Dwivedi & Lal, 2007; Cloesca and Dobrica, 2008, and Al-Shafi and Weerakkody, 2010) have examined the affect of education on the adoption of e-government and confirmed the assumption that education correlates positively with adoption of e-government. This evidence from theory and empirical research suggests that education can be considered as an independent variable to determine the differences among the users of e-government. Therefore, it is expected that the differences in users’ attitudes and perceptions toward e-government adoption can be explained by the differences in their level of educational attainment. Hence, the hypothesis is:

H2. There will be differences among the users towards the two dimensions of e-governance (e-openness and e-participation) in terms of education.

**Nationality**

Research indicates that there are differences in citizens perceptions toward public services attributed to nationality (Davis & Hendricks, 2007; Van Craen,
2013). However, through our search about the affect of nationality on e-government, we have found very little research. Boone (2012) examined the impact of some demographic factors, including ethnicity, on citizen use of the internet in USA and found that ethnicity was not significant factor in affecting filing method. Al-Hussaini et al., (2013) have examined the impact of e-government in limiting the administrative corruption in the public sector of Kuwait. They found statistical differences in citizen perception of the impact of some demographic factors, including nationality on the patterns of corruption in the public sector. Another study on Kuwait by Al Awadhi & Morris (2009) found the Kuwaiti people are more enthusiastic in adopting e-government compared to other Arabs living in the state of Kuwait. Therefore, it is expected that there is differences in attitudes and perceptions among users of e-government attributed to nationality. Hence, the hypothesis is:

H3. There are significant differences among the users towards the two dimensions of e-government (e-openness and e-participation) in term of nationality.

Gender
Several studies have adopted gender as a descriptive variable as well as an explanatory variable (Morgan, 1986; Morris and Venkatesh, 2000; Venkatesh et al, 2003; Dwivedi & Lal, 2007; Colesca & Dobrica (2008); Dwivedi & Williams, 2008; and Al-Shafi and Weerakkody, 2010). These studies have found that gender has an important effect in the adoption and use of e-government. Venkatesh et al., showed that male users use computer more than females and gender as one of the most important variable when adopting technology. In this research, the author followed Dwivedi and Lal’s (2007) proposition that gender can be considered as an independent variable to explain differences on the adoption of technology, in this case e-governance. The researcher proposes the following hypothesis to explain gender attitudes toward e-governance.

H4. The adoption of e-governance (as represented by two dimensions: e-openness & e-participation) will be more from male than female gender.

Type of employment
Ahmad and Batarsah (1994) and Ahmad (1997) argued that those working in public sector are more satisfied with public services compared to workers of private and non-profit organizations. With regard to adoption of e-government and based on our search, almost all studies have not included type of employment as an independent variable that affect the adoption of e-government with exception of Dwivedi and Lal ‘s study (2007). Those authors included occupation as independent variable and found differences among citizen perceptions towards the adoption of broadband attributed to this factor. In this paper, we added this variable and envisaged that the type of
employment as independent variable has an impact on the adoption of e-
governance. Therefore, we structured the hypothesis as:

H5: There exist differences among users towards the adoption of e-
governance (e-openness and e-participation) attributed to the type of 
employment.

Table (1): Research hypotheses

<table>
<thead>
<tr>
<th>E-governance</th>
<th>Gender</th>
<th>Age</th>
<th>Education</th>
<th>Nationality</th>
<th>Type of employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-openness</td>
<td>H1</td>
<td>H2</td>
<td>H3</td>
<td>H4</td>
<td>H5</td>
</tr>
<tr>
<td>E-participation</td>
<td>H1</td>
<td>H2</td>
<td>H3</td>
<td>H4</td>
<td>H5</td>
</tr>
</tbody>
</table>

Figure 1: The proposed research framework to evaluate demographic 
factors

Influencing citizen’s perceptions towards e-governance

Gender

Age

Education

Nationality

Type of employment

E-Governance

E-Openness

E-Participation
Methodology

This section discusses sample and data collection procedures and operational measures of variables used in the study as well as statistical tests used to evaluate the hypotheses.

Sampling and Data Collection Instrument

This study comprises the users of the UAE e-Government system; anyone who has experience using UAE e-Government system could participate in the survey. A questionnaire was used to collect data about users’ satisfaction with e-governance practices. In spite of the well known limitations of this approach to data collection, the questionnaire approach was, on balance, deemed appropriate to generate satisfactory data. The questionnaire consists of two parts. Part (1) contains questions on the respondents’ nationality, the type of employment; gender; age; and educational level. Part (2) of the questionnaire contains the items which measure the two constructs of e-governance. Each construct is measured using a Likert scale (ranging from 1 – strongly disagree to 5 – strongly agree).

Questionnaires were administered face-to-face to minimize misunderstanding and ambiguity. In spite of the well known limitations of this approach to data collection, the questionnaire approach was, on balance, deemed appropriate to generate satisfactory data. Convenience sampling was used to approach citizens who were willing to participate and fill the questionnaire. Three intercept locations were chosen within the municipality of Sharjah and Dubai: Sahara Mall, Sharjah City Center Mall, and Dubai City Center. Through 50 days of intensive work, the researcher and two trained students managed to obtain responses from 30 random users of e-government daily, resulting in an overall sample of 1500 users.

Due to the face-to-face interaction with respondents, the researcher was able to obtain 1500 usable questionnaires. The orientation of the 5 – point Likert scale was applied uniformly to avoid misconception. Low scores represent unfavorable and low perception of e-governance users, while high scores reflect a higher and favorable perception. According to questionnaire, there were 60% male and 40% female. The majority of e-government users were younger, ranging between 20 to 40 years. The respondents were employed in various occupations: 30% of them work in the public sector; 40% of them were from the private sector; 20% of them are students and 10% were from non-profit sector. Please see Table 2 for more description of demographic data.
Table 2
Demographic backgrounds of the Respondents

<table>
<thead>
<tr>
<th>Demographic</th>
<th>N=1500</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>900</td>
<td>60</td>
</tr>
<tr>
<td>Female</td>
<td>600</td>
<td>40</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 30</td>
<td>525</td>
<td>35</td>
</tr>
<tr>
<td>31 – 40</td>
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<td>30</td>
</tr>
<tr>
<td>41 – 50</td>
<td>375</td>
<td>25</td>
</tr>
<tr>
<td>&gt; 50</td>
<td>150</td>
<td>10</td>
</tr>
<tr>
<td>Education</td>
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<td></td>
</tr>
<tr>
<td>High School Diploma</td>
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<td>15</td>
</tr>
<tr>
<td>Two-Years College</td>
<td>300</td>
<td>20</td>
</tr>
<tr>
<td>University Degree</td>
<td>825</td>
<td>55</td>
</tr>
<tr>
<td>Postgraduate (Masters &amp; Above)</td>
<td>150</td>
<td>10</td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UAE citizens</td>
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</tr>
<tr>
<td>GCC citizens</td>
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<td>20</td>
</tr>
<tr>
<td>Other Arabs</td>
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<td>55</td>
</tr>
<tr>
<td>Type of Employment</td>
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<td></td>
</tr>
<tr>
<td>Public Sector</td>
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<tr>
<td>Private Sector</td>
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</tr>
<tr>
<td>Students</td>
<td>300</td>
<td>20</td>
</tr>
<tr>
<td>Non-Profit</td>
<td>150</td>
<td>10</td>
</tr>
</tbody>
</table>

Operational Measures of the variables
Based on published literature on e-governance (Saxena, 2005; Garson, 2006; Murad, 2010; Riddick, 2005, 2011, 2013; Kolsaker and Kelley, 2008; Singh, 2010), two constructs of e-governance, namely, e-openness and e-participation were selected for inquiry. E-openness opens the gate for citizens to participate in decision-making processes. Access to government information allows citizens to provide their own ideas and suggestions in forums and on-line community networks. The items used to measure the e-openness were adapted from (Kim et. al., 2005; Chun et al., 2010; Kim and Lee, 2012; Reddick, 2011; Gianluca et. al., 2011; Murad, 2010; Kabani, 2005; and Janowski, 2003). E-participation involves consultation on issues of concern, and the actual citizens’ involvement in government decision making and regulatory administration. The items used in measuring the e-participation were adapted from (Riddick, 2011, 2013; Kim and Lee, 2012; Kabani, 2005, Grason, 2006; and Janowski, 2003). All items of the questionnaire are adapted from prior studies to ensure the content validity of a scale and at the same time, allow generalizations of the results to be made.
A pilot test was conducted using face-to-face interviews with 5 government officials from Dubai e-government office, four professors in the field of ICT and a pilot test was conducted on 30 users of e-government services to ascertain the clarity and validity of the instrument and accordingly, revisions were made to eliminate ambiguities, inadequate wording, and hidden biases. A Cronbach’s coefficient alpha was computed to assess the reliability of the items used in measuring respondents’ perceptions of three e-governance dimensions. The Cronbach’s alpha values ranged between 0.86 and 0.95, suggesting that the measurement used in this study is reliable (Hair et al., 2008). The following reliability results are obtained.

<table>
<thead>
<tr>
<th>Table 3: Reliability Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
</tr>
<tr>
<td>E-openness</td>
</tr>
<tr>
<td>E-participation</td>
</tr>
</tbody>
</table>

Data Analysis
The means, reliability assessment, and T-test were carried out using the SPSS statistical package. T – Test was carried out for two demographic variables, namely: gender and type of employment. The results are displayed in Table 4 and 8. The level of significance was set at the conventional 0.05. The Scheffe method of multiple comparisons was used to determine the significantly differing categories for each independent variable (age, educational level, and nationality) for post hoc analysis. Results for these demographic variables are presented in Tables 5, 6, and 7 respectively.

Discussion
The main objective of this study was to determine the influence of demographic factors on e-governance practices represented by two dimensions, namely: e-openness and e-participation as well as the overall level of satisfaction attached by respondents to each of those dimensions. First, we start with the analysis and interpretation of findings as reflected by Scheffe method of multiple comparisons. These findings are displayed in Tables (4, 5, and 6). From Table 4, it is clear that the educational level of the respondents significantly affects the satisfaction with the two dimensions of e-governance (e-openness & e-participation). Apparently, respondents with more education show higher perceived value of the two dimensions of e-governance and find government websites providing more information. These results are consistent with hypothesis (1). This might be attributed to the level of maturity of an individual with higher educational attainment. These results are in conformity with previous studies such Rhee & Kim (2004); Colesca et.al, (2008); Dwivedi & Williams (2008) and Mwangakala (2012).

| Table 4 |
| One way analysis of the mean differences in users’ satisfaction according to educational level |
With reference to age, the respondents were classified into four categories (please see Table 5). One-way analysis of variance was performed to answer the second hypothesis (H2). Table (5) shows that there significant differences in the level of satisfaction attributed to age towards the two dimensions of e-governance. The results in Table (5) confirm that there are differences towards the two dimensions based on age. The younger respondents have shown higher satisfaction in one dimension, namely, e-openness compared to elder respondents. When younger respondents are compared with older respondents with regard to the dimension of e-participation, the results are reversed. This might be attributed to the fact that younger visit government websites to obtain information, rather than interacting or transacting with the government. In addition, higher satisfaction with e-participation on part of old respondents might be attributed to life experience, maturity and adaptability with e-government services. The findings are consistent with previous studies such as Colesca et al (2008); Dwivedi & Williams (2008) and Jun and Wang (2012).

Table 5
One way analysis of the mean differences in users' satisfaction by age

<table>
<thead>
<tr>
<th>E-governance Dimensions</th>
<th>20-30</th>
<th>31-40</th>
<th>41-50</th>
<th>&gt; 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Openness</td>
<td>3.88</td>
<td>3.44</td>
<td>3.14</td>
<td>2.23</td>
</tr>
<tr>
<td>E-Participation</td>
<td>1.87</td>
<td>2.21</td>
<td>2.68</td>
<td>3.17</td>
</tr>
</tbody>
</table>

*α ≥ 0.05, Scheffe M.C. for significantly differing groups: e-openness: (I-II), (I-III), (I-IV) and E-participation: (I-II), (I-III), (I-IV).
*α ≥ 0.05, Scheffe M.C. for significantly differing groups: e-openness: (I-II), (I-III), (I-IV) and e-participation: (I-II), (I-III), (I-IV).

The Scheffe method of multiple comparisons was also carried out to find out whether there is a significant difference attributed to nationality as an independent variable. The respondents were classified into three categories (UAE nationality; Gulf Cooperative council residents; and other Arab residents in UAE). The study found significant differences in the perceptions toward the one dimensions of e-governance, namely, e-participation. The “F" value for this dimension is significant at 6.42*. The mean value for UAE citizens is higher compared to the other two categories. With reference to e-openness, the study found no significant differences among all three categories and the mean values for this dimension is above 3.50. These results mean that all respondents despite their originality, they visit the government websites and appreciate the electronic information provided by the UAE government but they show less interaction with the government websites. This interaction with government websites is lower for other nationalities compared to UAE citizens.

Table 6
One way analysis of the mean differences in users’ satisfaction according to Nationality

<table>
<thead>
<tr>
<th>E-governance Dimensions</th>
<th>UAE</th>
<th>Other-GCC</th>
<th>Other-Arab</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Residents</td>
<td>Residents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>E-Openness</td>
<td>3.74</td>
<td>3.68</td>
<td>3.58</td>
</tr>
<tr>
<td>0.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Participation</td>
<td>2.64</td>
<td>2.04</td>
<td>2.36</td>
</tr>
<tr>
<td>6.42*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>375</td>
<td>300</td>
<td>825</td>
</tr>
</tbody>
</table>

*α ≥ 0.05 Scheffe M.C. for significantly differing groups: E-openness: (I-II), (I-III). And E-participation: (I-II), (I-III).

With regard to gender and type of employment, we applied T- Test to find out whether there are differences in respondents’ perceptions toward the two dimensions of e-governance. With reference to Gender, the results in (Table 7) show significant differences between men and women towards these two dimensions (T values: 2.88 and 3.01). Men respondents have shown higher perceived value of e-governance. These differences might be attributed to high expectations of men and the cultural and political environment which condition greater female use of government websites. These results support
hypothesis (H4) and are in conformity with previous research in this area such as Al-Shafi & Weerakkody, 2009 and Choudrie & Dwivedi, 2005.

Table 7
T-Test for users’ satisfaction with e-governance by gender

<table>
<thead>
<tr>
<th>E-governance Dimensions</th>
<th>Gender</th>
<th>No</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Openness</td>
<td>Male</td>
<td>900</td>
<td>3.54</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>600</td>
<td>2.98</td>
<td>0.98</td>
</tr>
<tr>
<td>E-Participation</td>
<td>Male</td>
<td>900</td>
<td>2.56</td>
<td>1.22</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>600</td>
<td>2.12</td>
<td>1.02</td>
</tr>
</tbody>
</table>

α ≥ 0.05

With reference to the type of employment, the results in Table (8) reveal significant differences among all categories for the two dimensions of e-governance. The T values for the two dimensions, e-openness and e-participation are 5.38* and 6.56* respectively, which confirm the study’s hypothesis (H5). In term of e-openness, students have higher satisfaction with mean value of 4.12 on Likert- Scale, followed by those working in private sector and non-profit organizations (See Table 8). These results mean that positive perceptions have been assigned by respondents to the value and benefits which they acquire from government websites. In term of e-participation, the satisfaction level is greater among those who are employed by the public sector with least satisfaction was shown by students. The mean values for all four categories of employment are less than 3.30 which indicate less value is given to the concept of e-participation. Because e-openness satisfies the self-interest of respondents in term of needed information, we found higher level of satisfaction with dimension of e-openness compared with e-participation which is intended to promote the public interest of e-government. The lower satisfaction with e-participation on the part of students and private sector might be attributed to the negative experiences in their encounter with government.

Table 8
T-Test for users’ perceptions with e-governance according to nature of employment
Although the primary objective of this study was to examine the influence of five independent variables on the value attached to the two constructs underpinning e-governance, it is informative to know the overall level of the satisfaction attached by the respondents to these two constructs. Table 9 provides the mean values of overall satisfaction for each dimension of e-governance identified in this study. The results show that the means value for e-participation was slightly below 2.50 indicating less favorable perceptions. With regard to e-openness, the mean value was more than 3.0 on Likert Scale, indicating overall favorable perceptions toward this dimension. There are numerous explanations for the less favorable perceptions given by the respondents toward e-participation. A plausible explanation is that the interactive features of government websites might not be up to citizens' expectations in involving them on issues related to policy making and regulatory administration. The difficulty in clarifying the terms of engagement and the lack of an awareness of both governed and governors on various rules and procedures might be contributed to the aforementioned problem. Another explanation for the less favorable perception toward e-participation might be the failure of government officials to reply and provide a satisfactory answer to citizens' complaints and needs via an email. In addition, the empathy of the public about their roles in the political and social life might be another plausible explanation for the low level of satisfaction with e-participation. Also there is a need to reconsider e-governance provisions from designing a user-friendly website to developing a community-of-practice
forum (Hafeez and Alghatas, 2006 & 2007) that allow better engagement of citizens adopting latest thinking in knowledge management discipline (Hafeez and Abdelmeguid, 2003).

The results in Table 9 indicate that the respondents perceive a moderate favorableness toward e-openness (3.26 on Likert scale) and these results are consistent with the good standing of UAE on online service index, meaning that respondents are satisfied with the ability of UAE government in delivering e-services and other sources of information such as public policies, regulations, reports and any downloadable databases deemed essential for good governance. Taking a quick glance to the results displayed in tables 4 through 8, one can find that most of the respondents agreed that the online presence of UAE national websites are satisfactory and meet the growing needs of citizens and other stakeholders for the different types of information and services.

<table>
<thead>
<tr>
<th>Table 9</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>**The overall mean value of the respondents to two dimensions of e-</td>
<td></td>
</tr>
<tr>
<td>government**</td>
<td></td>
</tr>
<tr>
<td><strong>E-Governance Dimension</strong></td>
<td><strong>Mean Ranking</strong></td>
</tr>
<tr>
<td>E-Openness</td>
<td>3.26</td>
</tr>
<tr>
<td>E-Participation</td>
<td>2.41</td>
</tr>
</tbody>
</table>

- 1 - 2 Unfavorable; 2 - 3 Less Favorable; 3 – 4 Moderate Favorableness; 4 – 5 high Favorableness

**Conclusion, Limitations and Implications**

In this paper, the perception of internet users in UAE towards the two dimensions of e-governance (e-openness & e-participation) are examined in terms of how they are affected by gender, age, education, nationality and nature of employment. The results show that the e-governance adopters in the UAE differ significantly in terms of gender, age, education, type of nationality and nature of employment. The results from the statistical analysis concluded that citizens and non-citizens ‘s Arabic speaking in UAE have showed satisfaction in (e-openness), meaning that they are visiting the government websites to obtain electronic information, but in terms of e-participation, they are passive in interacting with government.

There are some limitations of this study that should be noted. The questionnaire as an instrument of data collection is not free from subjectivity of respondents and was taken at one point in time. The users' reaction to government websites change in time and may depend on the conditions
surrounding the environment. But in spite of the well-known limitations of this instrument to data collection, the structured questionnaire was, overall, deemed to provide reasonably satisfactory data. In addition, the sample data might not be a good representation of the whole population because most of the respondents in this sample were educated and having experience in internet use. Therefore, the results produced from this study might be biased. It must, however, be noted that this study merely examined the influence of the independent demographic factors on the level of satisfaction with the aforementioned two dimensions of e-governance in UAE, but by the same token, and according to some scholarly writings, e-governance challenges and obstacles facing developing countries in general and Arab countries particularly are not identical, despite the fact that Arab countries share some similarities in social, cultural, and political aspects (Salem, 2006; Al Awadhi & Morris, 2009, Singh, 2010). Therefore, precautions should be taken in considering the generalization of the findings of this study on other Arab countries.

These results also suggest that full potential of electronic governance is unlikely to be realized without substantial citizen adoption and active participation in e-governance initiatives. Our research identified differences in citizens and non-citizens’ value perceptions toward the two dimensions of e-governance and hence toward active contribution to democratic processes. Therefore, this study contributes to the body of knowledge in e-governance adoption in United Arab Emirates and the results could influence public policymakers to develop e-governance in this country. The researcher proposes that elected and top policymakers in UAE should be encouraged to re-conceptualize the government websites as a supplementary interactive channel of communication in enhancing openness, transparency and participation. Focusing solely and investing heavily on technological solutions will not change relationships between citizens and bureaucrats. Rather steps should be taken by the authorities: First, by creating a culture of trust for both citizens and non-citizens to enhance their attitudes about standard government (government without “e”) and e-governance. Second, by fostering openness, eliminating distance and other divides and empowering citizens to participate in the political processes that affect their lives. Third, by establishing citizen/government forums that facilitate a feedback forms that allowing citizens to submit comments on legislative or policy proposals. And last but not least, is to consult citizens in designing the websites and the inclusion of their opinions on the design application. Furthermore, The UAE’s Ministry of Finance: Telecommunication Authority (TRA) with coordination of the seven Emirates’ offices of information and e-government authorities should carry out either on annual or bi-annual basis an evaluation of all public sector websites and collect user’s opinions on websites criteria such as user-friendliness, practical value, openness and interactivity. Future studies may look beyond the demographic dimensions towards studying the adoption of e-services by the UAE citizens through evaluating the attitude and behavior of the end-users (Hussain and Hafeez, 2008a &b). In addition, future research could be conducted in adopting e-governance by focus groups’ study. Also, policymakers should develop a citizen-centric model that involves key
stakeholders outside of government and then communicating a clear vision with them by highlighting the importance of their input into the e-governance initiative. Furthermore and in order to overcome the possibility of biasness of the results, future work should include nonusers of the internet. By exploring and comparing the adoption behavior of online and offline, more accurate findings could be obtained.

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