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E-Government Implementation and Acceptance: Challenges to increase public e-services Take-Up in Lebanon

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ABSTRACT

Governments continue investing in Information and Communication Technologies (ICTs), and e-services have become governments' priority. But research shows that e-services implementation accentuate inequalities. Using a study of e-government implementation in Lebanon as a background, this paper shows that e-government will lead to a system where only privileged segments of the population may have access to the government e-services. Thus, government online services implementation will create three types of inequalities: (1) inequality in access to ICTs and e-services, (2) inequality in the ability to use ICT and e-services among those who have access, and (3) inequality between those who will accept to use e-services and those who will not. What are the reasons of this e-services divide? The aim of this study is to explore the reasons of these three inequalities. Results show that reducing the gap can enhance the value of services to the citizen which dramatically increase e-services Take-Up.

Keywords

E-government, e-services, digital divide, e-services Take-Up, public online services.

INTRODUCTION

Governments continue investing in Information and Communication Technologies (ICTs), and e-services have become governments' priority (UNDESA 2008). However, implementing e-government and providing e-services does not guarantee the success of the e-government project. Heeks (2003a, 2003b) estimated that the failure rate of e-government projects in developing countries may be as high as 85 per cent. One of the main reasons of difficulties that developing countries face, when implementing e-government, is the low rate of e-services' acceptance and use by citizens (Heeks 1999, Jaeger & Thompson 2003, Moon 2002, Odedra-Straub 2003). That's lead to a low e-services' Take-Up (UNDESA 2008). Take-Up has been defined by the 2008 UNDESA report as the relative number of citizens accessing online services. Despite incentives and media campaigns that encourage them to go online for government transactions, citizens of developing countries still hesitate to use the government e-services (Dwivedi et al. 2009). Therefore, using sophisticated ICT has little value if citizens are not able to use them or if they refuse e-services (Helbig et al. 2009). Understanding the reasons of such low Take-Up may have opportunities to develop more effective e-government policies which can increase e-services' acceptance and use by citizens.

The implementation of e-government in developing countries can lead to a system where privileged segments of the population may have access to the services more easily (Ciborra 2005). Inequality and favouritism can continue and even increase. In fact, citizens who do not have access to Internet and/or those who do not have the ability to use ICTs can not use government e-services. Consequently, (1) a first order gap will be created between those who have access to ICT, Internet and e-services (haves) and those who do not (have nots) (Dewan & Riggins 2005, Van Dijk 2005). (2) A second order gap will also be formed based on the ability to use ICTs and e-services among those who have access (Dewan & Riggins 2005).

Research proved that providing e-services access and creating conditions for its usage does not always guarantee the acceptance of online public services by citizens. Results indicate that e-government offerings have failed, until today, to capture the imagination of citizens (Dwivedi et al. 2009). (3) A third order gap will be produced separating those who accept to use government e-services from those who do not.

These three orders effects can be problematic because e-government would probably fail if the users will not have the ability to use the technology to enable access of useful information and services (Dada 2006). According to Dada (2006), this would lead to a low user base, as the system would not be equally accessible by all citizens. Consequently, the main question of this study is: what are the reasons of this e-services divide?

Using a study of e-government implementation in Lebanon as a background, this paper shows that implementation of e-services create inequalities because citizens who do not have access to Internet and/or those who do not have the ability to use ICTs can not use government e-services. Therefore, three types of inequality will appear: firstly in access to the e-services (access divide), secondly in the ability to use the e-services (skills divide), and the final one is related to personal choices such as when one has an aversion to technology and so chooses not to make use of e-services (acceptance divide). Exploring these three types of divide can be conducted at two distinct levels of analysis, i.e. the country or macro-level, and the individual or micro-level (Stump et al; 2009). At the country level pertinent questions include how countries differ in access and use as a function of their wealth, education levels, gender, and country freedom of speech. At the individual level, we need to understand the reasons of acceptance or non-acceptance of e-services.

Consequently, the first aim of this paper is to (I) explore the access and the skills divided at the country level because they are beyond of the control of the individual (Dewan & Riggins 2005). Relying on secondary data obtained from several reputable sources, we try to examine the digital divided (DD) between Lebanon and twenty one countries which have the same culture (the Arabic nations). (II) Then, we examine the factors that influence the e-services acceptance at the individual level. Understanding the inhibitors and enablers of e-services use is the second aim of this paper. Therefore, in order to understand the reasons of the third order e-services divide that is related to personal choices, we carried out a survey in Lebanon related to the government's e-services acceptance intention.

Success of e-government projects will depend on how governments provide e-services access, create conditions for its usage, and entice citizens to accept using online public services (Dwivedi et al. 2009). Governments who understand the reasons of these kinds of divide may have opportunities to develop more effective e-government policies by creating conditions for e-services usage. The potential existence of these three levels of divide and the reasons of such divides should be of interest to those conducting research in business management – especially in the area of information systems (IS) and Marketing.

In the next section, after defining e-government and presenting the differences between the face to face government services delivery system and the virtual channel of service delivery system, we define the three e-services divide. Then, in the last section after presenting the Lebanese public administration, we explore the reasons of these three inequalities. Finally, we

examine challenges in increasing the value of e-government electronic services in Lebanon by reducing the e-services divides.

E-GOVERNMENT OR CONNECTING THE POLITICAL, THE ADMINISTRATIVE AND THE PRIVATE SPHERE

Definition of e-government

Electronic government or e-government is a relatively new subject of academic research that emerged in the late 1990s with the Internet boom. Recently there has been a growth in the volume of research output on this topic (Heeks & Bailur 2007, p. 243). But until today, there is still no standard definition of the e-government concept. Some scholars see it as a goal; others see it as a tool for achieving broader public sector reform goals (Heeks in Yildiz 2007, p. 655). The first group long for a fully-automated hence efficient government operation oriented toward service delivery. The second group sees it as a part of a larger value-cycle which is the democratic process (Yildiz 2007). This is why, it's difficult to define what exactly e-government is. It seems that it is one of those concepts that mean a lot of different things to a lot of different groups (Grant & Chau 2005, p. 714). As presented in table 1, the majority of e-government's definitions go beyond what is happening with government organizations to include the whole system involved in managing a society (Gronlund & Horan 2004) which is known as e-governance.

Brown & Brudney (2001, p.1) categorized e-government in three types of relation: Government to Government (G2G), Government to Citizen (G2C), and Government to Business (G2B). Means's & Schneider's (2000, p. 121) added Government to Supplier (G2S). Whitson & Davis (2001, p. 79), presented a whole vision of the government's relation with its stakeholders including government employees and NGOs. So new types of relations are integrated like Government to Employee (G2GE), Government to NGOs (G2NGO), and other stakeholders. By stakeholders they meant those groups that have a vested interest in the survival of the organization (Alkhafaji 1989). In 2007, Yildiz (2007, p. 650) incorporated two additional categories: Government to Civil Societal Organizations (G2CS) and Citizen to Citizen (C2C).

Focal domains in e-government

The government can be thought of as constituting the intersection between three distinct but interrelated spheres: the political sphere (Gronlund & Horan 2004, adapted from Molin et al. 1975, p.16), the administrative sphere (Gronlund & Horan 2004, adapted from Molin et al. 1975, p.16), and the private sphere. According to Brown (2005), e-government encompasses all government roles and activities shaped by ICTs. It is a continuous optimization of service delivery, constituency participation, and governance by transforming internal and external relationships through technology, the Internet and new media (The Gartner Group *In* Curtin 2007). It can be thought as the association of e-services, e-administration, e-procurement, e-participation, and e-governance. E-services 'connect the backend processes (back-office) that generate information and services with the end users, such as citizens (G2C), businesses (G2B), ONG and civil organization (G2NGO)' (Curtin 2007, p. 7).

E-administration has 'an inner focus and deals with the internal structure of government' (Curtin 2007, p. 7), such as government employee (G2GE). It also includes relations with other government (G2G). E-procurement centralizes government procurement in a one-stop shop (G2S). 'E-participation focuses primarily on the external relationships of the government with civil society and public sphere (G2SC). It encompasses citizen input on decision making and policy development, direct access to government officials, electronic voting, citizen and social networking, and other tools of citizen empowerment' (Curtin 2007). E-governance refers to the whole system involved in managing the society (Gronlund & Horan 2004). E-Governance connects the government with its political, social and administrative environment (Riley 2004). Figure 1 illustrates the e-government by using spheres interrelated. It also represents the association of e-services, e-administration, e-procurement, e-participation, and e-governance.

Table 1 Some definitions of e-government

Authors	Definition	Remarks
Means & Schneider (2000, p. 121)	The relationships between governments, their customers (other governments, business, and citizens), and their suppliers (other governments, business, and citizens) by the use of electronic means.	E-government in this definition is a tool. It does not take into consideration the organizational issues. It does not explicitly mention the e-government goals.
Duffy (2000)	Simply using technology to deliver government services directly to the customer 24/7. The customer can be a citizen, a business or even another government entity.	This definition does not take into consideration the improvements in government operations. It avoids the organizational issues involved in producing the public services.
Brown & Brudney (2001, p. 1)	The use of technology, especially Web-based applications to enhance access to and efficiently deliver government information and services.	In this definition, the e-government concept is defined by the objective of the activity (Yildiz 2007). By adding 'effectively', it acknowledges one of the e-government's goals.
Whitson & Davis (2001, p. 79)	Implementing cost effective models for citizens, industry, government employees, and other stakeholders to conduct business transaction online. The concept integrates strategy, process, organizations and technology.	This definition acknowledges the governance side of the e-government. It also presents a whole vision of the government's relation with its stakeholders.
OECD (2003, p. 23)	The use of ICTs, and practically the Internet, as a tool to achieve better government.	This definition acknowledges the governance side of the e-government.
UN & ASPA (2002, p.1)	Utilizing the Internet and the World Wide Web for delivering government information and services to citizens.	This definition does not take into consideration the information technologies other than Internet nor the improvements in government operations. It avoids the organizational issues involved in producing the public services.
EU (2004)	The use of ICT in public administrations combined with organisational change and new skills in order to improve public services and democratic processes.	This definition acknowledges the governance side of the e-government. It also mentions the e-government goals.
World Bank (2004) reformulated by Gronlund & Horan (2004)	Refers to the use by government agencies of ICT that have the ability to transform relations with the citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improve interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.	This definition explicitly mentions the e-government goals (more efficient government, better services to citizens, improved democratic processes). It also acknowledges the possible positive results (less corruption, increased transparency, greater convenience revenue growth, and/or cost reductions).

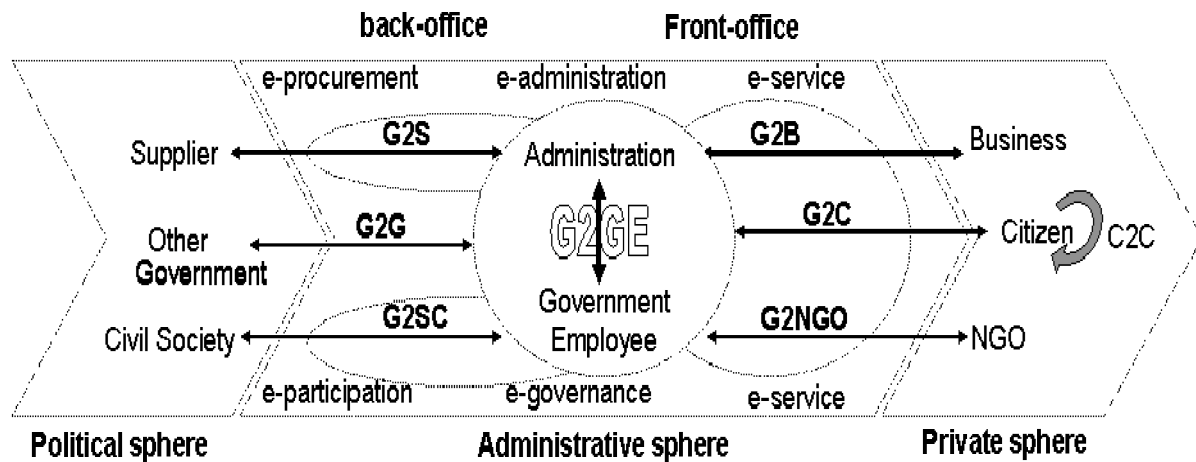


Figure 1. E-government represented as the association of e-services, e-administration, e-procurement, e-participation, and e-governance

Dwivedi et al. (2009) asserted that one of the most pressing challenges in e-government is aggregating the demands of e-government services and finding ways to increase overall use by citizens. We think that one of the most important objectives of e-government is to develop quality government services. Therefore, this article focuses mainly on the 'government to citizen' (G to C) aspects of e-government.

THE E-GOVERNMENT MULTICHANNEL OF SERVICE DELIVERY SYSTEM

Governments in developing countries continue proposing traditional services while introducing the virtual channel of service delivery. Channels of service delivery (CSD) are 'the ways of communication through which a service is delivered to the citizen' (Sousa & Voss 2006, p. 357). It is the mean by which a citizen requests a public service and receives the resultant output from a service. The CSD is constituted of two parts: the first is visible to the citizen and known as the front-office, and the second is invisible or hidden and constitute the back-office. The process of service creation is known as 'servuction' (Eiglier & Langeard 1987). The principal components of this service delivery system are: the back-office, the inanimate environment (the physical support), the personnel contact, as well as the citizens (Eiglier & Langeard 1987). The citizen plays a key role in the co-creation of the service (Spohrer et al. 2007, p.5). Therefore, Janseen et al. (2009, p. 16) defined services as: 'a series of interactions between the service provider and clients that result in an observable output.' Researches show a consensus around the main characteristics of the services, i.e. intangibility, perishability, inseparability, simultaneity, and variability (e.g. Eiglier & Langeard 1987, Parasuraman et al. 1991). In the case of public services, the governments can only perform a part of the actions that create the service. They offer value-propositions to their citizens. Together, citizen and front-office interact to co-create value.

According to the 2008 UNDESA report, governments are proposing two types of public services: (1) traditional services delivered by the traditional physical CSD, and (2) e-services created through virtual CSD. Traditional physical channel consists of a means of communication with the citizens employing a physical (bricks-and-mortar) infrastructure in a face to face context (Sousa & Voss 2006). While, virtual channel 'consists of a means of communication using advanced ICTs' (Sousa & Voss, 2006, p. 357). Consequently, citizens have the possibility to choose between using online services provided by a virtual channel or traditional services provided by the traditional physical channel. Because of the different nature of the physical and online service components, CSDs that support delivery of these two types of components also have different nature (Sousa & Voss 2006, p. 359).

The Face to Face Service Delivery System

The service citizen receives from a traditional physical CSD is co-created (Spohrer et al. 2007, p.5) through a physical interaction with different entities of the face to face service delivery system. These different entities are interdependent of each other. The back-office provides the infrastructure which is located within the invisible organization and systems.

Therefore, the service quality depends largely on the human intervention and inanimate environment that takes place in the front-office. These ‘people-delivered services’ or ‘service encounters’ have traditionally been conceptualized as ‘high-touch, low-tech’ because of the interpersonal and physical contact between the citizen, the government employees, and the other citizens (Parasuraman et al. 1991, 1988, Soussa & Voss 2007). Figure 2 represents the face to face service delivery system known as traditional physical CSD.

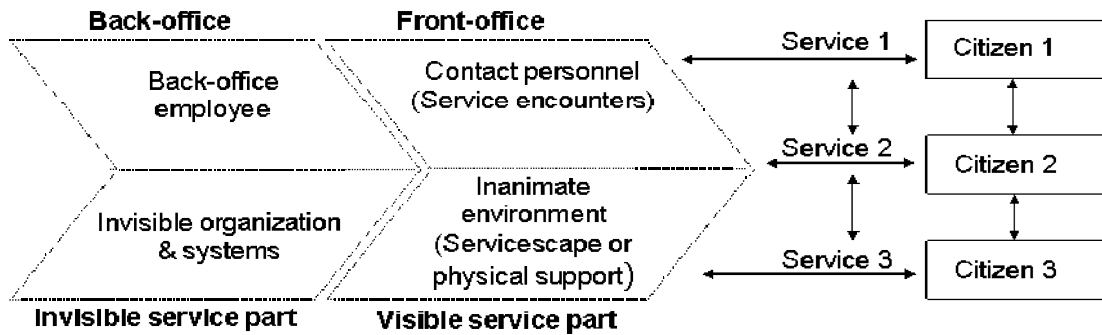


Figure 2. A face to face service delivery system or traditional physical CSD

The Virtual Channel of Service Delivery System

In the case of virtual CSD, online services or ‘self services’ are produced by citizens in interacting with technological interfaces (e.g., the Internet, interactive kiosk, etc.) without a face to face government employee involvement (Bitner et al. 2000, Dabholkar 2000). In this context, e-services emerged as all interactive services that are delivered on the Internet using advanced ICTs (Sousa & Voss 2006).

For the virtual CSD, the role of the associated virtual back-office, comprised exclusively of information systems, is mostly the processing of information. The virtual front-office, consisting of a virtual user interface, is highly integrated with the back-office information systems, interacting with them in an automated fashion (Sousa & Voss 2006, p. 359). The virtual back-office is linked to a physical back-office.

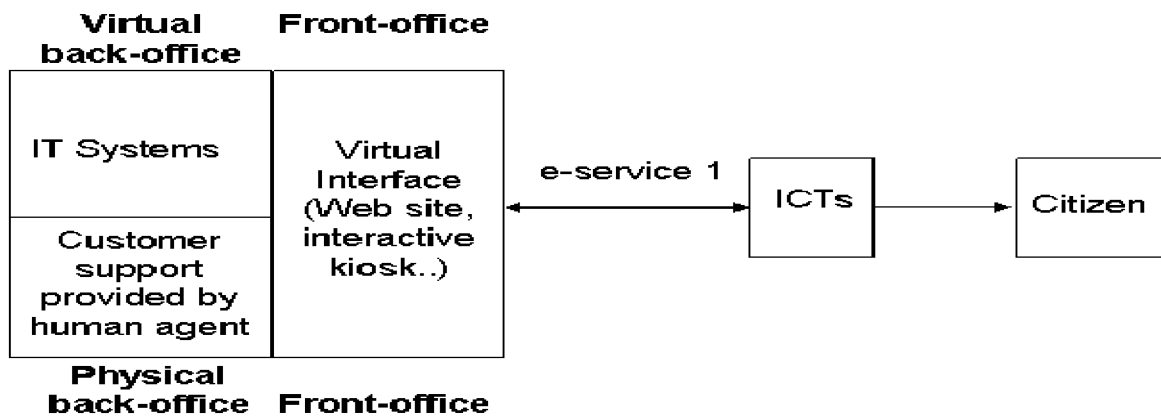


Figure 3. A virtual channel of service delivery system

In a virtual channel of service delivery system, the citizen plays a key role in co-production activities and in value co-creation (Sampson & Froehle 2006). The government performs certain activities, like providing downloadable forms, allowing online submission of forms and payment by credit card, all in secured link, but the citizens must also perform activities that transform their own states like searching for the right site address, for information about e-services offerings, etc, else the

benefit or value of the service will not be fully attained. A citizen, for example, with little experience or computer knowledge will receive a lower quality services that leads to inferior value services.

Therefore, the e-services value will depend on at least four types of factors: the type and capacity of ICTs used (type of material, type of Internet connection, etc.), the government e-services attributes, the citizens experience and personal trait variables, and the contextual factors.

Multichannel of Service Delivery System and Inequalities

The virtual channel of service delivery will allow for integrated e-services that eliminate boundaries and will be available 24/7 (UNDESA 2008). This will not be possible with the face to face service delivery system.

As shown in figure 4, the implementation of the multichannel service delivery system will create three types of inequality between citizens. The first one is an access divide that will separate those who have access to e-services (haves) and those who do not have (have nots). The ‘have nots’ (Dewan & Riggins 2005, Van Dijk 2005) will continue to use traditional services. The second inequality is a skills divide that separate those who have the ability to use the e-services and those who do not have. Those who do not have the skills to use e-services will continue using traditional services. The final one is related to e-services acceptance (acceptance divide) and will separate those who will choose to use e-services from those who will decide to use traditional services. The figure 4 presents these three types of inequality in e-government. Those who will use e-services will have the possibility to access individually-tailored, high-quality services available 24/7. That will lead to a system where connected citizens may have access to the services more easily. Therefore, inequality and favouritism will increase. All this will increase the gap between the educated elite who can afford and accept technology and the uneducated poor who cannot (Basu 2004).

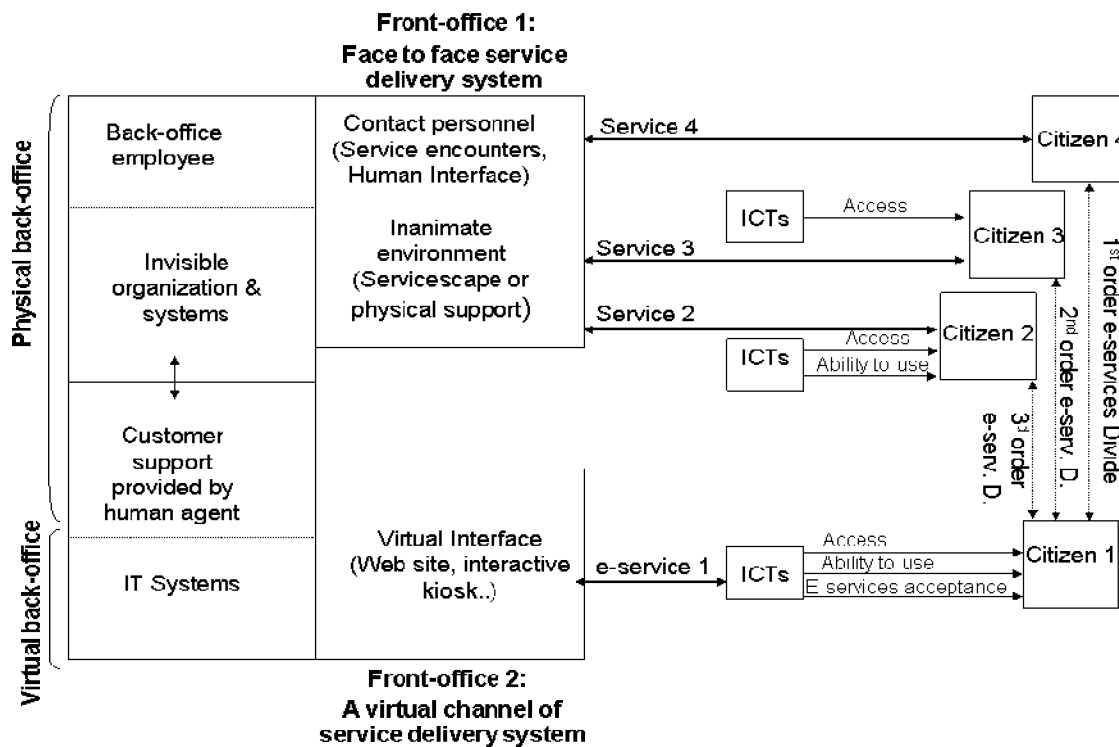


Figure 4. The multichannel service delivery system and the three types of inequality in e-government

E-GOVERNMENT IN LEBANON

The Republic of Lebanon

Lebanon is a liberal republic in Western Asia, bordered by Syria and Israel. The country of the cedars has a population just above four million and a land surface about 10400 square kilometres. The Lebanese Government is comprised of three main branches: the Presidency of the Republic, the Presidency of the Parliament, and the Presidency of the Council of Ministers. To these three main branches is added seven core agencies which are: the Civil Service Board, the Central Inspection, the Court of Accounts, the Central Disciplinary board, the Constitutional Assembly, the Office of Minister of State for Administrative Reform (OMSAR), and the Religious Judiciary. Together the three main branches with the seven core agencies constitute the central government bodies. Around of these ten central government bodies, there are twenty one Ministries and fifty Autonomous Agencies. These Ministries and Autonomous Agencies which are under the tutelage of the Ministries form the services branch of the Lebanese Government and constitute the key interfaces with the citizen. Lebanon is divided into six governorates (muhafazah) that are divided into 25 districts, and then subdivided into 780 municipalities. These offices constitute the interface with the local citizens.

The Lebanese Public Administration

Today, after sixteen years of Civil War (1975 – 1990), fifteen years of Syrian occupation (1991 - 2005), and one month long of war with Israel (12 July – 14 August 2006), Lebanon or what was known before as the ‘Switzerland of the East’ is again able to revive and stabilize its economy. But these successive and long period of war caused significant and serious damage to Lebanon’s civil infrastructure (Picard 2001). Since 1990 until today, the corruption in the Lebanese administration has reached levels that call for worry (Dagher 2002). Today, Lebanese citizens do not trust the public administration (Harfouche 2008, OMSAR 2002). In this context, the Lebanese Government formed in 1995 the Office of Minister of State for Administrative Reform (OMSAR) with the aim of designing and implementing a modern administration (OMSAR 2001). And then, in 1997, the government created a Ministerial Information and Communication Technology Committee with the aim to develop and implement a nationwide ICT Policy (OMSAR 2001). So, the first ICT national policy and strategy was developed in 1998. And then, four years after, the first e-government strategy of Lebanon was developed by OMSAR in 2002; followed in 2003 by two studies (e-Strategy and e-Readiness) with recommendations to achieve the project.

Today, the Lebanese Government is introducing the virtual channel of service delivery in parallel with the traditional CSD. This new multichannel service delivery system shows that the Lebanese Government is proposing two types of public services: traditional services and e-services. This situation has created three types of inequality between citizens: an access divide, a skills divide, and an e-services acceptance divide. What are the reasons of these e-services divides?

Two Methodologies for Two Objectives

Exploring these three types of divide can be conducted at the country and at the individual level (Stump et al; 2008).

(1) At the country level, we can explore the inequalities that are beyond of the citizens’ control: access divide and skills divide. Therefore, in a first step, secondary data will be used to examine the digital divided between Lebanon and other Arabic countries that have the same culture (Hofstede 1980). Thus, in the first part of this study, pertinent questions include how countries differ in access and use as a function of their wealth, education levels, gender, and country freedom of speech. Therefore, data collected from several reputable sources were used to explore the extent demographic variables that affect Internet use by Lebanese. To do so, we compared the Lebanese data to those of the twenty one Arabic countries.

(2) At the individual level, we need to understand the reasons of acceptance or non-acceptance of e-services. So, in the second step of this research, we examine the factors that influence the e-services acceptance by citizens. Therefore, in order to capture the influence of these perceived variables, we carried out a survey in Lebanon related to the government’s e-services acceptance intention. Our aim was to understand the reasons of the third order divide (the acceptance divide) that is related to personal choices. Questions were asked about e-services acceptance intention or about reasons of non acceptance.

THE ACCESS AND SKILL DIVIDES IN LEBANON

E-services are usually accessed through Internet and computers which are quite expensive for most of the people in the developing countries (Singh & Sahu 2008). The use of e-services also needs knowledge of languages (minimum one language). In addition, user requires sufficient technical skills to be able to use a computer (Singh & Sahu 2008, p. 480).

In Lebanon for example, despite the country’s growing debt, the Lebanese Government continues investing in ICT, and e-services have become the Government first priority (OMSAR 2002). However, Lebanese do not often use Internet. Studies

found that in 2008, only 26.28 percent of the Lebanese population uses the Internet services, 11.45 per cent have PC at home, and only 30.53 per cent have a mobile telephone (UNDESA 2008). This is a disturbing fact, because Lebanon cannot afford to wastefully spend large amounts of money for such an investment, especially if it will lead to a system where only privileged segments of the population may have access to the government e-services.

Using data at the national level can be used to compare Lebanon with the Arabic countries. In fact, ICTs and Internet diffusion is not homogeneous in the Arab World, and depends on many factors. Therefore, we calculated the Internet diffusion rate by weighting the number of users per country by the population of that country (James 2008, p.2). Then, we characterized the divided between these countries by using GDP per capita (Stump et al. 2008, Dewan et al. 2005, p. 411), rate of adult literacy (Carvin 2000), gender (Jackson et al. 2008), and country freedom of speech (Beilock & Dimitrova 2003, Robison & Crenshaw 2001). The variables are presented in the table 2.

Tables 3 and 4 present the model summary. In order to analyse these secondary data, we used ANOVA analysis which is the appropriate statistical technique especially when the dependent variable and the independent variables are metric.

Our model explains 78% of the variable "Internet adoption rate". Results show that the most significant factor that affects the Internet adoption in the Arab World is the 'female literacy rate' (0,779), then the GDP per capita (0,454), and lastly 'country freedom of speech' (0,206). We present the results in this formula:

$$\text{Internet adoption rate} = ,054 + 0,41 \text{ freedom of speech} + 3,12\text{E-}006 \text{ GDP per capita} + 0,006 \text{ female literacy rate} - 0,005 \text{ literacy rate of men}$$

Country	GDP per capita	Internet diffusion rate	rate of literacy		
			Female	Male	Total
United Arab Emirates	37000	0,50	81,70	76,10	77,90
Qatar	87600	0,43	88,60	89,10	89,00
Bahrain	33900	0,35	85,00	91,90	89,90
Kuwait	55900	0,35	81,70	85,10	83,50
Oman	19000	0,10	67,20	83,10	75,80
Saudi Arabia	19800	0,22	70,80	84,70	78,80
Libya	12400	0,04	72,00	92,40	82,60
Tunisia	7400	0,17	65,30	83,40	74,30
Algeria	6700	0,10	61,00	78,80	70,00
Lebanon	10300	0,24	82,20	93,10	87,40
Jordan	4700	0,18	86,30	95,90	91,30
Morocco	3700	0,21	39,40	64,10	51,70
Egypt	5000	0,11	46,90	68,30	57,70
Syria	4700	0,18	64,00	89,70	76,90
Iraq	3700	0,002	64,20	84,10	74,10
Mauritania	1800	0,01	31,90	51,80	41,70
Sudan	1900	0,04	50,50	71,80	61,10
Djibouti	2300	0,02	58,40	78,00	67,90
Yemen	2500	0,01	30,00	70,50	50,20
Comoros	1100	0,03	49,30	63,60	56,50
Somalia	600	0,01	25,80	49,70	37,80

Table 2 Arabic World Principal Data (Sources: CIA World Factbook 2008, UNDESA 2008)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,883(a)	,780	,725	,07726

a Predictors: (Constant), rate of male literacy, country freedom of speech, GDP per capita, rate of female literacy

Table 3 Final Regression

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	,339	4	,085	14,187	,000(a)
	Residual	,096	16	,006		
	Total	,434	20			

a Predictors: (Constant), rate of male literacy, country freedom of speech, GDP per capita, rate of female literacy

b Dependent Variable: Internet diffusion rate.

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	,054	,138		,390	,702
	country freedom of speech	,041	,023	,206	1,735	,102
	GDP per capita	3,12 ^E -006	,000	,464	2,715	,015
	rate of female literacy	,006	,003	,779	2,314	,034
	Rate of male literacy	-,005	,003	-,425	-1,502	,153

a Dependent Variable: Internet diffusion rate

Table 4 Reliability Analysis

THE E-SERVICES ACCEPTANCE DIVIDE

Factors that affect the e-services acceptance divide are related to personal choices, such as when a citizen chooses, for one reason or another, not to make use of government e-services. In this case, the acceptance or non-acceptance of e-services is a voluntary choice. One of the most useful theories in the ICT voluntary adoption context is the one that extend the theory of planned behavior (TPB, e.g. Ajzen 1991) to develop the model of adoption of technology in households (MATH, e.g. Venkatesh & Brown 2001, Brown & Venkatesh 2005). According to MATH, ICT acceptance intention (IA) is a weighted function of attitudinal belief (utilitarian, hedonic, and social outcomes), normative belief, and the control beliefs structure.

We used MATH model to explain the reasons of acceptance or non-acceptance of e-services by Lebanese. In our model, government's e-services acceptance process involves careful weighting and evaluation of (1) utilitarian¹ (or functional), hedonic² (emotion driven benefits like sensory pleasures, daydreams...), social³ outcomes of e-services acceptance, (2) normative belief, (3) and control belief. These relationships are typically formulated using an expectancy-value model (Fishbein 1968) which attaches a weight to each outcome. Evaluation of the utilitarian consequences is based primarily on cognition. According to Bretschneider, Gant, & Ahn (2003), potential users evaluate the usefulness of the e-services (PU, e.g. Compeau & Higgins 1995b; Davis 1989, 1993; Davis et al. 1989, 1992; Moore & Benbasat 1991, p.195; Rogers, 1995, p.15-16; Thompson et al. 1991; Venkatesh et al. 2003). The evaluation of hedonic consequences is determined primarily by feelings and affect. The potential users evaluate the affective outcomes of the e-services (PAO, e.g. Sun & Zhang 2006, Van der Heijden 2004). The evaluation of social outcomes is determined by the status gains and image, by result demonstrability, and by visibility (PSO, e.g. Davis 1989, 1993, Davis et al. 1989; Moore & Benbasat 1991, Rogers 1995). The evaluation of the normative consequences is determined by perceived social influences (PSI, e.g. Karahana et al. 1999, Thompson et al. 1991, Triandis 1971) which is constituted of secondary sources influences (mass media channels like: Media, News, News papers, TVs, etc.), direct influences from family, friends, workplace referents' influences (interpersonal channels, e.g. Venkatesh & Brown 2001), personal network exposure (PNE, e.g. Valente 1995, p. 70, Hsieh et al. 2008), and by government influences (PGI, Lynne et al. 1995, Keil et al. 2003, Hsieh et al. 2008). According to Hartwick & Barki (1994), the control evaluation is determined by the comparison of resources available (such as: money, time, and information) versus barriers inhibiting acceptance (such as: high cost, lack of support, lack of security, privacy respect, fear of government control, and difficulty of use). In the case of e-services, potential users evaluate the perceived security (SEC, e.g. Coyle 2001), the perceived privacy (PRI, e.g. Coyle 2001), the fear of government control (FGC), the perceived government support (PGS, Tan & Teo 2000), the computer self efficacy (CSE, Compeau, & Higgins 1995a, Lin 2003) and the e-services ease of use (PEU, Davis 1989, 1993; Davis et al. 1989; Rogers 1983, p.232; 1995, p.15-16; Moore & Benbasat 1991).

This model was empirically tested through two surveys designed to capture a cross-sectional snapshot and a dynamic longitudinal picture of the underlying phenomena. In order to accomplish this objective, data were collected from 188 randomly chosen Lebanese potential government's e-services users.

In the first stage, we used a qualitative method. Open-ended questions were asked about government e-services acceptance intention or about reasons of non acceptance intention. Therefore, after explaining the government online services, respondents were asked if they will accept to use government e-services and about influencing factors in their e-services intention acceptance or non acceptance decision. Regardless their answer, they were further investigated as to the reasons of their choice. Therefore, respondents who accepted government e-services were asked to identify the factors that led to the e-services acceptance. Similarly, respondent who did not accept to use it were asked to identify the factors that led to the non acceptance decision.

Open-ended responses were double coded based on a start list (Miles & Huberman 1994, p. 58) that included definitions from prior research for the variables. Responses that did not seem to fit to these definitions were held out. Then, they were further analyzed and additional constructs have been identified (e.g. fear of government control). The table 5 presents the final constructs and their definitions. The intercoder reliability was 81 per cent which is well above the minimum of 70 per cent identified by Miles & Huberman.

Then, in the second stage, we used a quantitative method. Three months after the first stage, we contacted all stage 1 respondents for a follow-up survey to understand their changing views and follow-up behavior pattern. In order to measure the weight or the importance that the individual gives to each variable, we asked respondents to rate each factor on how important it is in his acceptance or non acceptance decision, using the scale ranging from 1 (Not Important) to 5 (Very Important).

¹ Prior research has emphasized the importance of the utilitarian outcomes which are defined as the extent to which using an ICT enhances the effectiveness of an individual activities. These attributes are very strong predictors of IT acceptance (Venkatesh & Brown 2001).

² Research describes hedonic outcomes as the pleasure derived from the ICT acceptance and usage.

³ Social outcomes are defined as the public recognition that would be achieved as a result of the ICT acceptance and usage.

Belief structure	Core construct	Definition	References
	Perceived utilitarian or usefulness of the e-services	The degree to which a person believes that using e-services would be useful.	Davis (1989, 1993), Davis et al. (1989), Rogers (1995, p.15-16), Moore & Benbasat (1991, p.195), Compeau & Higgins (1995b), Davis et al.'s (1992), Thompson et al. (1991), Venkatesh et al. (2003).
Attitudinal Belief	Perceived affective outcome of the e-services	The extent to which using e-services is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated.	Van der Heijden (2004), Sun & Zhang (2006).
	Perceived social outcome of e-services	The change in status that coincides with a purchase decision.	Davis (1989, 1993), Davis et al. (1989), Rogers (1995, p.15-16), Moore & Benbasat (1991, p.195).
Normative Belief	Perceived social influences to use e-services	The extent to which citizens member of a social network influence one another's behavior. We consider this normative Belief as the general social pressure on individual to use e-services.	Perceived social influences combine Secondary Sources Influences like Media, News, News papers, TVs, etc. (SSI), Direct Influences from Family and Friends (FFI), Workplace Referents' Influences (WRI, e.g. Venkatesh & Brown 2001), and Personal Network Exposure (PNE, e.g. Valente 1995, p. 70, Hsieh et al. 2008).
	Perceived government influences	The perceived expectation from the government institutions for individuals to accept e-services.	Lynne et al. (1995), Keil et al. (2003), Hsieh et al (2008).
	Perceived security	The citizens' confidence over the security aspects of the e-services.	Adapted from Hernandez & Mazzon (2007), Chen & Barnes (2007).
	Perceived privacy	The guarantee that government will protect citizen's privacy and Information concerning the citizens will not be known to others.	Adapted from Hernandez & Mazzon (2007), Chen & Barnes (2007).
Control Belief	Fear of government control	Worrying from the fact that the Government can use the personnel data gathered through e-services in order to control the citizens' income or activities.	New construct.
	E-services ease of use	The degree to which an individual believes that using government e-services would be free of effort.	Davis (1989, 1993), Davis et al. (1989), Rogers (1983, p.232; 1995, p.15-16), Moore & Benbasat (1991).
	Computer self efficacy	The individual's perceptions of his or her ability to use ICT in the accomplishment of a task.	Compeau, & Higgins (1995).
	Perceived government support	The help from the government in using e-services.	Tan & Teo (2000).

Table 5 Definitions of the Model's Constructs

Drivers of Government E-services Acceptance and Non Acceptance

To understand e-services acceptance and non acceptance intention decision, the data were partitioned into three categories based on citizens intentions expressed in stage one: (1) citizens who intended to accept e-services (intenders), (2) citizens who intended not to accept (non-intenders), and (3) those who were uncertain.

Factors Affecting the Acceptance Intention Decision

Results show that among 188 citizens, only 33 (17.55 %) intended to accept government e-services. Perceived usefulness (PU), perceived government support (PGS), computer self efficacy (CSE), and perceived government influences (PGI) are the key drivers of the e-services acceptance intention (AI). As expected, perceived usefulness (PU) was the most important, followed by computer self efficacy (CSE), perceived government influences (PGI) and support (PGS), both in terms of number of citizens reporting the factor to be determinant and in term of the importance of the factor on the scale.

Factors Affecting the NON Acceptance Intention Decision

For the citizens who intended not to accept government e-services, barriers like fear of government control (FGC), lack of support (PGS), lack of security (SEC), lack of privacy (PRI), and lack of knowledge (CSE) were most significant. In this case, the fear of government control was the most important determinant, both in terms of frequencies and in term of importance.

Results also show that some factors (fear of government control, perceived privacy, and perceived security) may act to uniquely impede acceptance of government e-services. According to Cenfetelli & Schwarz (2008), these acceptance inhibitors are beliefs held by a citizen that acts solely to impede acceptance intention when present (and perceived) but has no effect when absent (or not perceived). These acceptance inhibitors are distinguished from acceptance enablers as being a perception for which there is no clear, positively valenced antipole that is psychologically meaningful.

	Intenders (33)			Non-Intenders (146)			Uncertain (9)
	Frequency	Mean	Standard deviation	Frequency	Mean	Standard deviation	Frequency
Attitudinal Belief							
Perceived utilitarian of the e-services	32	4.2	0.3	54	3.2	0.6	9
Perceived affective outcome of the e-services	2	3.1	0.6	19	3.7	0.7	
Perceived social outcome of e-services	7	3.2	0.6	0	0	0	
Normative Belief							
Perceived social influences to use e-services	4	4.0	0.4	0	0	0	
Perceived government influences	19	3.5	0.5	0	0	0	
Control Belief							
Perceived security				97	4.0	0.8	
Perceived privacy				54	4.1	0.4	
Fear of government control				119	4.0	0.4	
Perceived ease of use E-services	14	3.2	0.8	28	3.6	0.7	
Computer self efficacy	20	4.1	0.4	53	4.2	0.2	7
Perceived government support	19	4.0	0.5	63	3.6	0.6	

Table 6. Factors affecting acceptance and non acceptance intention of government e-services

CONCLUSION

The implementation of e-government in Lebanon can lead to a system where privileged segments of the population may have access to the services more easily. Therefore, three types of inequalities will be created: (1) inequality in access to ICTs and e-services, (2) inequality in the ability to use ICT and e-services among those who have access, and (3) inequality between those who will accept to use e-services and those who will not.

In order to understand the reasons of these divides, we attempted in this paper, to combine demographics and national factors with individual and psychological factors that are related to the citizens' subjective perception.

The results of our first study show that, at the country level, the most significant factor that affects the Internet acceptance in Lebanon and in the Arab World is the 'female literacy rate' (0,779). Therefore, to reduce the access divide, we recommend the Lebanese Government to increase the rate of literacy among women and to provide more Internet access to educated women. We recommend also transforming the municipalities' offices to an online one-stop-shop service centers where online service kiosks can be installed. These kiosks can serve as an online access points for those who do not have access to the Internet or are not ICT literate.

A key finding in our second study was the relationship between perceived usefulness (PU) and e-government acceptance and non acceptance intention. First, the importance of perceived usefulness of government e-services was supported by our open-ended questions. In fact, choosing to accept e-services is rooted in the perceived usefulness of these e-services. Therefore, we suggest targeting citizens who consider that they may benefit from the online services (businessmen and travellers). Consequently, perceived usefulness may serve as motivation to encourage these citizens to start using online government services.

The open-questions' answers also revealed that non accepters believe that online services do not offer anything relevant for them: "No need or no reason for me to use government e-services". This study also identifies sceptics concerned about fear of government control, perceived security and perceived privacy of government online services.

We also identified a relation between the computer self efficacy and the acceptance and non acceptance intention. According to Dimitrova & Chen (2006), self-efficacy refers to the potential adopter's confidence in his or her own ability to utilize the government e-service. The results show that lower confidence is likely to lead to a non acceptance decision. The lack of confidence in one's ability to use government e-services will negatively affect the one's intention to accept government online service.

To reduce the acceptance divide we recommend the Lebanese Government to increase privacy and security of their e-services. The Lebanese Government must publicly promise to not use the personnel data gathered through e-services in order to control the citizens' income or activities. Lebanese Government's communication can incorporate the usefulness, the ease of use of the government e-services,

As with any scientific research, this study has limitations. First, it is important to recognize that the primary limitation of this study is the potential for response bias. A second limitation concerns the way the e-services were introduced. In other words, the way the open-ended questionnaire was stated might have focused the citizen's attention on some advantages or disadvantages of the government e-services.

In this paper, we performed the first step in exploring the e-services divides in Lebanon. More empirical tests are needed to valid this model and to extend it by adding key demographic characteristics that can also explain the e-services divides. Success of the Lebanese e-government projects will depend on how Lebanese Governments provide e-services access, create conditions for its usage, and entice all the citizens to accept using online public services. Understanding the reasons of the access, skills, and acceptance divides may give the opportunities to develop more effective e-government policies by creating conditions for e-services usage.

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