Predictors of on-line services and e-participation: A cross-national comparison

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ARTICLE INFO

ABSTRACT

Effective e-government creates an environment for citizens to have greater access to their government and, in theory, makes citizen-to-government contact more inclusive. Our research examines two distinct but related measures of e-government effectiveness, namely the online service index and the e-participation index, both reported in the 2010 e-government survey conducted by the United Nations. We analyze the impact of political structure, public sector performance and policy initiatives on both indices in more than 150 countries. Our multiple regression analysis shows that there is greater e-government capability in countries that have more effective public sector governance and administration, and policies that advance the development and diffusion of information and communication technologies. More democratic institutions and processes, however, appear to have a negative impact on e-government. In addition, countries that practice effective governance and promote competition in the telecommunications sector demonstrate more extensive provision of e-participation. These results suggest that the path to e-government leverages different strategies depending on a nation's political structure, and that authoritarian countries may be utilizing e-government to maintain the status quo.

1. Introduction

The number of countries that are expanding initiatives to further public sector efficiencies and transparency with new information and communication technologies (ICT) applications is increasing (United Nations, 2012). The most significant improvement in recent years is that more countries are offering tax forms, legal and legislative documents, transactional capabilities, e-updates, and other features and services online. Only three countries had failed to establish and online presence in 2012 (United Nations, 2012, p. 39). Moreover, the government portals and web sites include more advanced technical features, and a large percentage of national governments regularly update their e-government offerings. While we see the delivery of online services becoming an established practice, only a few countries are successfully implementing e-participation. Indeed, more than one-third of countries offered no e-participation services at all in 2012 (United Nations, 2012, p. 45). Of the UN member states that do, only a limited number offer services that enable citizens to be active participants in government decision-making and the policy-making process.

A vast body of scholarly research has documented the significant global digital divide between high income and low income countries in diffusion of ICTs (Chen & Wellman, 2004; Norris, 2001; Rice, 2003). A similar divide has emerged in the implementation of both

government e-service delivery and e-participation. Yet a number of countries in the developing world have managed not only to overcome these trends and establish a significant e-government presence, but also to offer innovative tools to enhance government performance that many developed countries still lack. It is therefore important to understand what explains the variation in the availability and quality of e-government across the globe. This study seeks to answer that question by analyzing the impact of potential explanatory factors on recent United Nations' global measurement of (1) online government services and (2) electronic participation capabilities (United Nations, 2012). The next section develops our hypotheses on the impact that political structure, public sector performance, and specific public policy initiatives have on a nation's e-government capability in the form of government services offered and of opportunities for citizens to participate in government decision making online. We then present our measures and analyses that estimate the effects of structure, performance and policy variables on two measures of e-government at the national level in approximately 165 countries. Section 4 describes the factors that affect the UN online service index (OSI) and e-participation index (EPI), which reveal both similarities and differences in the two sets of findings. The final section discusses our conclusions and their implications for e-government and e-participation.

2. Explaining variation in e-government success

Government agencies and political bodies use information and communication technologies to improve the availability of information

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and delivery of services to citizens and to facilitate their communication with business and industry. These in turn improve efficiency and transparency in government (Jaeger, 2003; World Bank, 2009). ICTs also offer citizens the potential for greater access to government officials and offer policy makers the ability to make citizen-to-government contact more inclusive (Reddick, 2005). For the less fortunate and more isolated members of society, advances in ICTs can help overcome the geographical, institutional and social barriers to information and give marginalized groups a voice in the political sphere.

While a few scholars find the potential of e-government to have been elusive (Heeks, 2002; Hindman, 2008; Sunstein, 2007), the greater concern is that a technological divide is emerging both between nations and within nations, creating groups of "information-rich" and "information-poor" societies. Even more disconcerting is that this divide seems to overlap considerably with the economic divide that already separates developed and developing countries and, thus, is reinforcing or even widening existing economic, political and social inequalities between the haves and have-nots (Forestier, Grace, & Kenny, 2002; van Dijk, 2005).

E-government surveys from recent years provide data that show that the concerns of the pessimists have not been unwarranted (United Nations, 2010, 2012; West, 2008). Among the 20 global leaders in the implementation of e-government in 2012 (United Nations), 16 are from either North America, Europe or Oceana and three are from high income countries in East Asia. A similar distribution is found among the next 25 countries, which the United Nations has designated as "emerging leaders." Most low income nations rank within the bottom tier. Most African nations, moreover, have showed little improvement over the past few years. This digital divide also appears along the lines of income and region for offerings of online government services (Chatfield & Alhujran, 2009; Gascó, 2005; Helbig et al., 2009) as well as in the opportunities for citizen e-participation (United Nations, 2010, 2012).

It is not surprising that there is a statistical relationship between greater e-government development and national income. Countries with more wealth and a more affluent and technologically-developed society are in a stronger position to respond to citizens' demands for more spending on ICTs. For nations in the developing world, however, weak citizen demand for e-government and limited financial resources give these nations less incentive to develop their e-government offerings. Surprisingly, the earliest cross-national studies did not find a significant relationship between resources and a nation's commitment to, and success in, implementing e-government applications (Norris, 2001; West, 2005). More recent studies have found that countries with more wealth and an affluent population spend more on e-government development (e.g., Moon, Welch, & Wong, 2005; Rose, 2005).

Societies that allow for peaceful transitions of power, widespread electoral participation, and checks on power also are more likely to demand that government use new means for providing transparency and citizen participation. Democratic governments also should be inclined to be more inclusive in an attempt to widen their electoral appeal. Moreover, societies that have a culture of encouraging political expression and facilitating communication between government and citizens are more likely to demand that their governments use technology to provide more transparency and avenues for participation (Dahl, 1989; Hague & Loader, 1999; Lijphart, 1999). Studies that examined global e-government data prior to 2004 found that neither democracy (Moon et al., 2005) nor civil liberties (West, 2005) help explain e-government performance. More recent studies suggest that e-government has developed more rapidly in countries with stronger democratic institutions (Azad, Faraj, Goh, & Feghali, 2010; Gulati & Yates, 2011; Kim, 2007; Rose, 2005). Each of these studies used a different indictor for measuring political structure, however, indicating that a more careful measurement strategy is needed before making any firm conclusions about the relationship between e-government and democratic institutions.

The absence of a consistent and clear relationship between democratic political structure and e-government development is illustrated by the cluster of countries that the UN has highlighted for their efforts in developing e-government resources. Countries exhibiting various levels of democratic freedoms are cited for their highly integrated national governmental portals that allow citizens quick and easy access to government information and services. Tunisia and Russia were cited for developing and implementing standards for ministries and agencies and greater linkages and integration among departments. On its national portal, Brazil, for example, provides an A to Z search feature that allows citizens to locate the appropriate department to apply for government benefits and make payments on taxes, fines and utilities. South Korea provides similar opportunities but through multiple channels. The UN also heaped praise on democracies such as India, Israel and Denmark for their e-government efforts, but also had praise for Saudi Arabia, China, and Pakistan (United Nations, 2012, ch. 2).

There is similar inconsistency in the relationship between democracy and more democratic participatory e-government features (i.e., e-participation), as the cluster of countries offering e-participation opportunities illustrates. For example, Kazakhstan publicizes data on the number of questions and comments received by agency executives and the frequency of responses made by the executives. In Columbia, citizens can post comments and express their views through government social media pages and employ online forums, blogs, and opinion polls to engage with government officials. Citizens in Australia can send comments and suggestions on draft regulations to specific ministries and also view results of the outcomes of previous public e-consultations (United Nations, 2012, sec. 2.2.2).

If innovative e-government initiatives have been implemented successfully in a number of non-democratic countries, then factors other than resources and democratic institutions contribute to the availably of government services and participatory opportunities online (Åström et al., 2012; Krishnan & Teo, 2012). Since e-government largely is an extension of existing government institutions and administered by public sector personnel (Brown, 2005; Layne & Lee, 2001), it is likely that a more professional and effective public sector will offer more information and services online than a public sector that is poorly developed and inefficient (Kalu, 2007; Moon & Norris, 2005; Tolbert, Mossberger, & McNeal, 2008). Fountain (2001) argues for example, that public sector organizations that are structured as Weberian bureaucracies are best able to develop technological innovations, which includes e-government applications. But while these innovations are meant to enhance efficiency and functionality by facilitating improved collaboration, information sharing and communication among organizational members, new technologies can be employed coercively to reinforce existing norms and relationships.

The evidence from US municipalities supports Fountain's theoretical framework by showing that technological innovations are more likely to emerge in governments in which the managerial culture is more professional in terms of administrative personnel and procedures (Moon, 2002; Moon & Norris, 2005; Norris & Moon, 2005). At a cross-national level Kim (2007), and Gulati and Yates (2011), found that government effectiveness was important in determining e-government performance. Other studies have found that poor governance, measured as the extent of corruption, reduced the quality of web-based government applications and services (Azad et al., 2010; Rose, 2005). Lee, Chang, and Berry (2011) not only found similar results for corruption, but also found that greater government corruption reduced the extent of e-participation development. The strong theoretical link between effective governance and e-government development coupled with the empirical evidence from these cross-national studies are the basis for our first hypothesis:

H1. Countries that have more professional public administration practices will have more extensive development of e-government than countries that have less professional administrative practices.

King et al. (1994) emphasize the importance of supply-side and demand-side policies and regulations in developing and deploying