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The Institutional Spheres Of e-Government Usage

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Abstract

A large number of studies have been conducted in an attempt to investigate and understand the usage determinants of e-government applications. However, there seems to be lack of research that look into the factors of environment, termed as the institutional spheres, as most focus on technological, individual and organizational perspectives. Therefore, using institutional theory as a lens, a framework is proposed to consider the different institutional realms that will affect the decision to use the various types of e-governments applications. These aspects are drawn together into a model and its implications for future IS research are discussed.

Keywords: *E-government, Institutional Determinants, Use*

1 INTRODUCTION

One of the most prominent effects of the ICTs is its usage in the public sector that extends beyond the peripheral automation of mass transactions. Today, the diffusion of the Internet and the information technologies has commenced for a new agenda for IT usage in the government administration, mainly on their interactions with businesses and citizens, and among themselves; the phenomenon known as e-government. The rapid growth of e-government initiatives has also opened up new dimensions and avenues of research as they do not focus solely on technologies, but essentially take into considerations the issues of complex political and democratization agenda (Yildiz 2007), socio-economic systems (Hardy and William 2008), global integration (Garson 1999) and usage antecedents (Wang and Liao 2008, Loo, Yeow and Chong 2009, Dooley and Purchase 2006, Moe 2004).

In the usage and implementation theme, many factors describe the practice of e-government that can be classified into Tornatzky and Fleischer (1990) and Jeyaraj et al. (2006) of technological, organizational, environmental and individual determinants. Yet, many do not embark on the environmental background, named as institutional spheres, as the critical antecedents. Yildiz (2007) argues e-government researches lack in-depth analysis and a deeper recognition of the institutional environments despite the fact they serve as an important subject.

The institutional approach to the study of IT has led to a significant insight regarding the importance of institutional environments to organizational structure and actions (Teo et al 2003). Thus, having a firm understanding and a solid grasp of the institutional perspective as the context that manipulates the usage of e-government applications is important since the interactions require different levels of influence structure. However, such investigation must be carefully crafted as e-government is not about a single, explicit independent system, but it involves various integrations, coordination and interactions with different groups of society.

In such circumstances, further rationalization is needed to tackle the issue. In studying e-government, one cannot escape from investigating the institutional spheres from the perspectives of cohesive legislative authority, influence from the authorised institutions and body, or the pressure imposed by corresponding organizations and peers since the success depends on multiple directions, influence and guidance.

Hence, this paper attempts to provide a conceptual understanding of the factors that determine the e-government usage from the dimensions of institutional influence. The three types of institutional pressures are offered to relate to three categories of e-government applications, namely government-to-government (G2G), government-to-business (G2B) and government-to-citizen (G2C).

2 THEORETICAL BACKGROUND

The concepts of institution and institutionalization have been defined in diverse ways, with substantial disparity among approaches (Scott 1987). Evolving from the sociological domain, Scott's belief was supported by King et al. (1994) who claimed there was no precise and comprehensive definition of institution. However, borrowing from Hughes (1939), an institution is defined as "any standing, social entity that exerts influence and regulation over other social entities as a persistent feature of social life, outlasting the social entities its influences and regulates, and surviving upheaval in the social order" (King et al. 1994).

As expressed in this definition, the focal theme of institution is pressures to conform to and obey the norms, regulations, policies and practices imposed on a social entity. As such, institutional theories posit that social entities face pressures to conform to shared notions and behaviours, as violating them may call upon for the organization's legitimate accordance (DiMaggio and Powell 1983 in Teo et al. 2003).

In discussing institutional theory, one of the most imperative approaches is to view it from the perspective of structural influence. Three isomorphic pressures of coercive, normative and mimetic are found to be most influential that explains the relation between institutions and organizations (Teo et al 200, King et al. 1994, Orlikowski and Barley 2001, Silva and Figueroa 2002). Originally developed by DiMaggio and Powell (1983), it was suggested coercive and normative pressures normally operate through interconnected relations, while mimetic pressures act through structural equivalence (Teo et al. 2003).

Coercive pressures are defined as formal or informal pressures exerted on organizations by other organizations upon which they are dependent (DiMaggio and Powell 1983). The pressures may stem from resource-dominant organizations, regulatory bodies and parent corporations (King et al. 1994). In contrast to DiMaggio and Powell (1983) who enforced on the mandatory imposition, Scott (1987) offered a more fine-grained distinction of the imposition; by means of authority or by means of coercive power. Compared to coercive imposition, Scott (1987) believed structural forms imposed by authority were met with less resistance, occurred more rapidly, higher compliance and less superficial. However, in the public organizations circumstances, there exists a special authority relation, in which they rely on legitimate coercion (Scott 2001, p. 53).

On the other hand, normative pressures manifest themselves through dyadic interorganizational channels, professional, trade, businesses and other key organizations (DiMaggio and Powell 1983). Unlike coercive situation that requires mandatory conformation, normative pressures trigger and persuade organizations to behave similarly within the social network on the voluntary basis (King et al. 1994). King et al. (1994) who worked on normative pressure found customers' and trade associations' system adoption were among the key factors of organizations' interorganizational system adoption. Earlier conformance to normative pressures was found in professional sectors and organizations (DiMaggio and Powell 1983) to show conformance to external legitimacy, with the aim to improve organizational efficiency (Scott 1987).

The final isomorphic force is the mimetic pressure which initiates an organization to change over time to become more like others in its environment (DiMaggio and Powell 1983). According to Havemen (1993), mimetic pressures manifest themselves in two ways; the prevalence of a practice in the organization's industry, and the perceived success of organizations that have adopted the practice within the industry (King et al. 1994).

The three isomorphic pressures offer a rich foundation in explaining the factors that determine the usage of various e-government categories. Undoubtedly, a different institutional-organizational-individual explanation is required to justify for distinct e-government applications usage.

3 E-GOVERNMENT APPLICATIONS

Halshin (2004) in Yildiz (2007) argues there is no universally accepted definition of e-government. However, the e-government concepts presented in Yildiz (2007) show they share common theme. Very often the various definitions take into account the government use of information technologies and the Internet (Duffy 2000, Jaeger 2003, Means and Schneider 2000) for delivering and accessing information and services (Duffy 2000, Means and Schneider 2000, Brown and Brudney 2001) between governments, customers (citizens) and suppliers (businesses) (Duffy 2000, Means and Schneider 2000). As such, the concept describes e-government is not a single, isolated system rather it interacts with various distinctive users for fulfilling unique purposes and functions.

The interactions as demonstrated in Figure 1 explain for the major categories of e-government, which are the government-to-government (G2G), government-to-business (G2B) and government-to-citizen (G2C) (Lee, Tan & Trimi 2005).

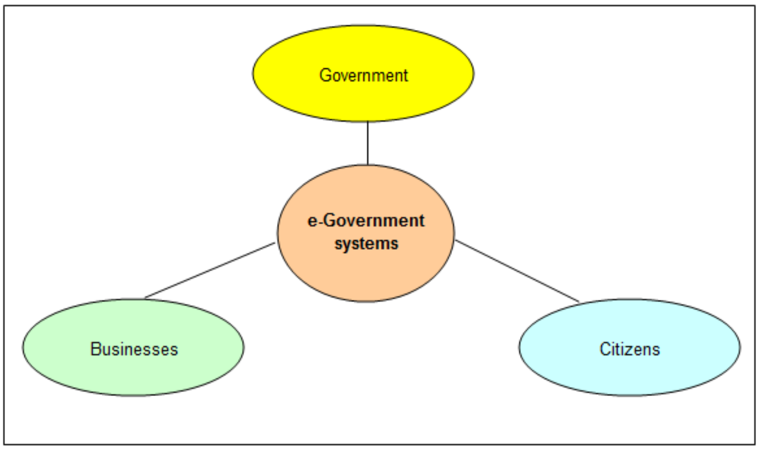

Figure 17. e-Government system interactions

The categories are further elaborated as the following:

1. Government-to-government (G2G)

The system enables government agencies at different levels to work more easily together. It requires the use of common data warehouse for establishing, disseminating, sharing and retrieving information. Two major user groups are the central government and the respective agencies. Some of the applications include human resource management information system, project monitoring system and generic office environment.

2. Government-to-business (G2B)

The system is used to improve business interactions between the government and the business as well as to enhance the government-supplier relationship. Even though the major user is the government agencies, the business still plays an important role as the system calls for a two-party communication. Hence, from the business perspective, the system is also known as B2G, to reflect the business interaction. The examples of the applications are interactive public e-procurement system and e-partnership.

3. Government-to-citizens (G2C)

The system provides opportunities for greater citizen access to government-related information and interaction with the government. In this context, related government agencies and citizens are the major users. From the insight of the citizen, the system is called C2G. Some of the applications may require for citizens mandatory usage, for instance the public university application system, while some are merely for voluntary, optional usage like the online tax-filing system. In addition, the systems may be interactive, in which input from the citizens as users are required, or it may be static websites that only deliver information, for instance ministries portals.

4 RESEARCH MODEL AND DESIGN

Figure 2 and Figure 3 depict the models for investigating the institutional spheres as the antecedents to different types of e-government applications usage. Since e-government applications are used by various user groups based on the context, we propose two models formulated for government as the users (Figure 2) and non-government as the users, ie the businesses and the citizens (Figure 3).

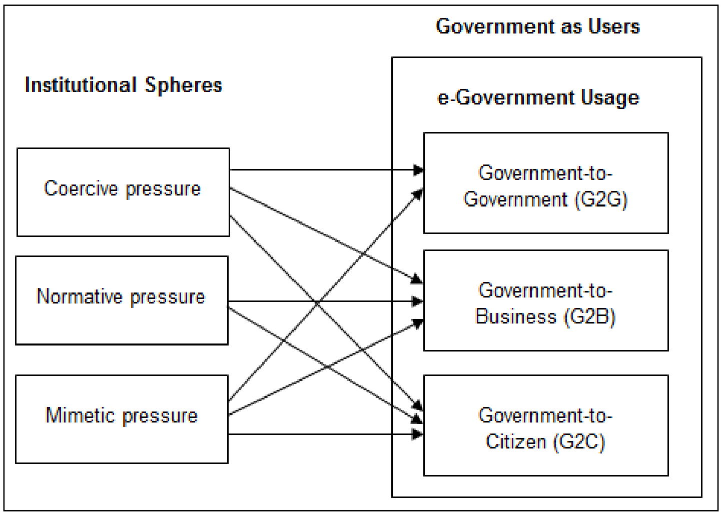

Figure 18. Institutional spheres to e-government usage (government users)

4.1 The Institutional Determinants to e-Government Usage for Government as Users

<u>Coercive pressures</u>

Coercive pressures are the legitimate regulations that require dependent organizations to oblige them. Regulations are the direct or indirect intervention in behaviour of those under the institution's influence, with the specific objectives of modifying the behaviour through affirmative means (King et al. 1994). On the other hand, dependent organizations are the government agencies and the public departments that receive important resources from the higher institutions such as the ministries, and should adopt structures or programs that serve the institutions' interests (Teo et al. 2003).

Since the main goals and objectives of the e-government implementation and usage concern with public administration cost reduction, and always deal with efficient and effectiveness issues, the dependent organizations have to comply with the institution's demand in carrying out the aims. Hence, regulations and legitimate authorizations are imposed to the agencies and department to use all the e-government applications to serve the institutions, businesses and citizens in the forms of G2G, G2B and G2C to increase the benefits of the institutions.

In the context of the e-government applications usage among the government agencies and departments, the legitimate regulations can be traced as the policy compliance and conformance to practices and structures imposed by the public institutions. In this perspective, the organizations are required to use the e-government systems for fulfilling the institutions objectives as the policy is mandatory, which explains the coercive pressures relations.

A study conducted by Chu et al. (2004) attempted to verify the role of structure in determining the decision to use e-government among public administrators. Although the studied predictor was not thoroughly discussed as an institutional environment factor, the result suggest for a significant relationship between the variables.

<u>Normative pressures</u>

Normative pressures among government agencies and department exist in the form of potential influence from counterpart users. While Teo et al. (2003) emphasized on the innovation adoption by an organization caused by the observation and learning about the advantages from its partner, we believe expectation from the user counterparts plays a more important role.

Unlike coercive pressures which will lead to greater usage of all three types of e-government applications, we argue normative pressures only present for the G2B and G2C applications. This is because the G2B application requires for active and continuous participations not only from the government side, but most important is from the businesses and suppliers. Besides, the use of the G2B application does not solely rely on the usage frequency, but more on the coordination and transaction purposes (Wu et al. 2007). With this regard, having to confirm to suppliers expectations that government agencies use electronic system is found to be a significant determinant for the system use among government organizations (Dooley and Purchase 2006, Leipold et al. 2004).

On the other hand, although the participation and the coordination from the government agencies and departments are minimal for the G2C, the expectations from the citizens that public organizations deploy and use the technologies in the ICT and globalization era will still place a pressure for the usage among them. The widespread expansion, adoption and use of ICT in a nation are often the results of public administration's active interventions, policy making and IT strategies (Silva and Figueroa 2002). Hence, citizens are expecting the government agencies become the leading organizations in promoting the ICT deployment by participating in the G2C applications.

<u>Mimetic pressures</u>

From an institutional perspective, an organization may adopt an innovation on an account of external pressures for the fear of being left behind (Wu et al. 2007). On the other hand, from the sociological perspective, organizations decision to engage in a particular behaviour depend on the perceived number of similar others in the environment that have done so (Soares-Aguiar and Palma-dos-Reis 2008).

These views share the notion that an organization may adopt an innovation not on the account of the innovation usefulness, rather because other similar organizations have done so. This phenomenon is what Wu et al (2007) referred as "the bandwagon effect". In addition, an organization decision to engage in a particular behaviour depends on the perceived numbers of similar others in the environment that have already performed the actions; a following act in order to avoid the embarrassment of being perceived as less innovative or less responsive (Teo et al. 2003). Therefore, the decision for government agencies and departments to use the e-government applications can be explained as an imitation behaviour due to the IT practices that have been implemented in other equivalent group organizations.

Another perspective of mimetic pressure comes from the perceived success and usefulness of using the technological innovation by similar organizations. Many organizations tend to adopt and use an innovation only after the advantages have been proven success. The mimicking behaviours (Teo et al. 2003) allow the potential adopters to evaluate the IT practices. As a result, when an innovation is proven to be successful, it will generate a pressure for using the three types of e-government applications to the respective users.

4.2 The Institutional Determinants to e-Government Usage for Non-Government as Users

This section discusses on the forces and pressures that are related to the usage of e-government applications for none government users as shown in Figure 3. The two types of the applications, the G2B and the G2C involve businesses and citizens. However, as the discussion focuses on the businesses and citizens, the B2G (business-to-government) and the C2G (citizen-to-government) will be used to reflect the users.

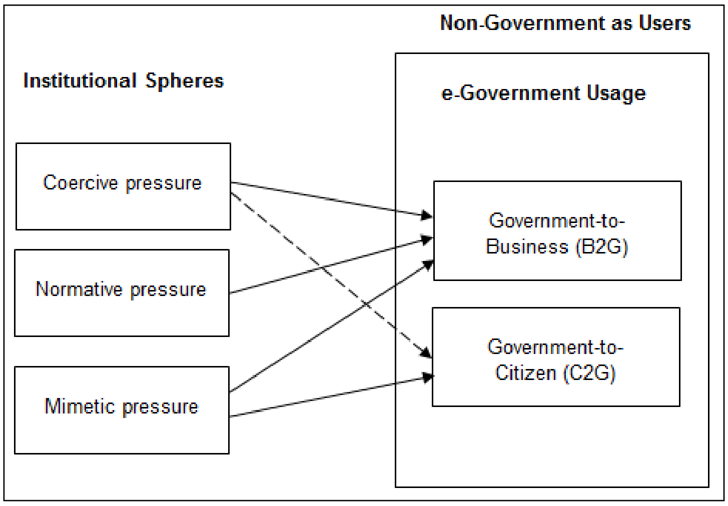

Figure 19. Institutional spheres to e-government usage (non-government users)

<u>Coercive pressures</u>

The coercive pressures imposed for non-government users vary according to the nature of the applications and intensity of user participations. Whereas the pressure placed for the business to interact with the government via the G2B application is stronger, the level of enforcement differs for citizens, for the G2C applications.

Very often, the B2G requires for a mandatory online coordination between the businesses and the government (Rashid. 2007). Specific applications include e-procurement system, e-tendering, e-partnership, e-bidding and e-quotation. Although there is minimal participation from the business side, they are still obliged to policies and business structures imposed by the public institutions. Failure to comply with the regulations will prohibit them from participating in the government businesses.

Unlike the B2G applications that seek for mandatory business participation, the C2G applications can either be based on obligatory or voluntary participation. Undoubtedly, coercive pressures and authoritative policies for compulsory systems such as public university applications and job applications through the respective ministries exist. Therefore, citizens are bound to these rules and regulations should they want to participate in the applications.

However, there are also voluntary C2G applications such as tax e-filing system and online tax payment system. In this context, citizens can choose either to use the online systems or engage in the traditional, manual processes. Hence, the pressure imposed on them for this kind of applications is not explained by coercive enforcement.

<u>Normative pressures</u>

Similar to the normative pressures faced by the government in using the G2B application, the counterpart concept applies to the business users for participating in the B2G applications. Even though the B2G could be initiated by independent government agencies, most often the application is developed on the basis of the federal or state government as an institution's objectives (Rashid. 2007). Thus, both businesses and government agencies are the users as the consequences of the institution agenda.

As the B2G application asks for a two-way interaction and coordination, the businesses are expected to use the system from their counterpart. This therefore explains the normative pressures for the B2G usage among the businesses.

Mimetic pressures

The mimetic pressures contribute as the determinants to the B2G and C2G usage among the businesses and the citizens respectively via the "bandwagon effect" and the mimicking behaviour. Like the government users for the G2B and G2C, businesses and citizens are forced to use the same applications as a result of not wanting to be perceived as technologically incompetent and lack of innovative enthusiasm by others within the entity.

In addition, the positive impacts, advantages and success gained by adopting business users and citizens will tend to promote for a greater B2G and C2G extend of usage. This behaviour is extensively discussed in the domain of cognitive psychology. Similarly, the dimension is reflected as perceived usefulness (Davis 1989, Taylor and Todd 1995) and performance expectancy (Venkatesh et al. 2003). Within the studies, the behaviour to use an information technology innovation is vey much reflected by the perceived success and advantages. Thus, in the context of the e-government, we argue the proven deployment success by others will become a factor for the applications usage.

4.3 Research Design

The frameworks proposed need to be tested for validity. In this case, the study will be carried out through a combination of interviews with a group of distinctive e-government users and also a set of survey as determined by the contexts. Although one may argue the institutional concept from the sociological perspective is hard to be operationalised, such attempts is significant as studies could be duplicated for different settings and results be compared. Previous institutional environment studies that used survey include Dooley and Purchase (2006), Chu et al. (2004) and Teo et al. (2003).

Since there are three groups of users, which are the government users, the businesses and the citizens, the surveys will be conducted independently for each case. To ensure the content validity of the instruments, constructs will be adapted from previous studies that represent the concepts of the model under investigation.

5 CONCLUSION

From the institutional theory perspective, our study extends its applicability in the context of e-government, a domain which has been investigated as an intact system. Through the conceptual work, we intend to provide an initial explanation on how each institutional viewpoint places a pressure to distinct e-government applications according to the context. Thus, while the framework may be complex, it is a necessary exercise since such attempt will enhance the understanding of e-government as a new research paradigm.

In addition, it also elaborates on the roles of legislative imposition, counterpart expectation, bandwagon effect and mimicking behavior to each user for all types of e-government applications. We believe a survey research design is an appropriate method, but cautions should be placed as different units of analysis must be targeted based on the context of the users, ie the organizations and the individuals.

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