



Effects of national culture on e-government diffusion—A global study of 55 countries



Fang Zhao^{a,*}, Kathy Ning Shen^{b,1}, Alan Collier^{c,2}

^aAmerican University of Sharjah & The University of the South Pacific, Suva, Fiji

^bFaculty of Business and Management, University of Wollongong in Dubai, PO Box 20183, Dubai, United Arab Emirates

^cUniversity of Otago, Dunedin, New Zealand

ARTICLE INFO

Article history:

Received 6 October 2012

Received in revised form 4 June 2014

Accepted 8 June 2014

Available online 16 June 2014

Keywords:

E-government diffusion

Cross-cultural studies

GLOBE societal culture practices

E-government development index

E-participation index

ABSTRACT

This study aims to examine whether and how national culture affects e-government diffusion. To explore the possible relationship, we analyze two sets of international-level indexes: (1) the indexes of five of the societal cultural practices of the GLOBE project [35]; and (2) the e-government development and participation indexes from the most recent United Nations e-government survey [71]. Because economic development reportedly plays an important role in both e-government diffusion and cultural dynamics, we also examine the relationships between GNI per capita, culture, and e-government diffusion. A sample of 55 countries was studied. We find that culture does have an effect on e-government diffusion in various ways, and that economic development in the form of GNI per capita has a moderating effect on the relationship between culture and e-government diffusion. We discuss the implications of these findings for e-government strategy. In addition, we identify the limitations of the study and propose areas for future research. This study is among the first to use the GLOBE approach to study cultural effects on e-government diffusion while endeavoring to explore the relationship between culture and e-government diffusion.

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1. Introduction

E-government is defined by the World Bank [75] as the use of information technology (IT) to improve the business processes and service delivery of government departments and other entities. E-government first began to appear only in the mid-1990s. After having been used for more than a decade, it has been embraced by almost all of the Member States of the United Nations, although there is a significant variation among nations in its diffusion [71]. For the purpose of this paper, we use the term ‘e-government diffusion’ to refer to e-government development and citizens’ adoption of e-government (e.g., e-participation). International studies [28,29,32,48] indicate that e-government is likely to provide citizens with added values of ‘easier, more convenient, better quality, reduced turnaround times’. Additionally, the implementation of e-government initiatives has been reported

as stimulating business process change, increasing internal efficiency, and improving levels of information sharing, inter-operation, levels of innovation and competitiveness, and social inclusion, while resulting in greater transparency and accountability, along with greater proximity to citizens [24,23,30,44,55]. However, e-government development and the realization of its potential benefits have been confronted by serious issues and challenges due to the complexity of the technology involved, the constraints of providers’ capacity, and the limited uptake of e-government by citizens [3,32,71].

We argue that a cultural perspective may lend insight into some of the issues and challenges facing e-government diffusion. Culture can be seen as a multi-level (i.e., national and organizational) and multi-facet (e.g., values, beliefs, artifacts, etc.) construct [63]. Culture is defined in many ways. Hofstede [33] defines it as ‘the collective programming of the mind that distinguishes the members of one group or category of people from another.’ According to this definition, we define national culture as a set of collective beliefs and values that distinguish people of one nation from those of another. It is widely acknowledged that culture has a significant influence on consumer behavior and technology diffusion [20,61,65]. However, the effect of culture on e-government diffusion has not yet received as much attention as it

* Corresponding author. Tel.: +971 6 515 2575; fax: +971 6 558 5065.

E-mail addresses: fang.zhao@usp.ac.fj (F. Zhao), kathyshen@uowdubai.ac.ae (K.N. Shen), acollier@corplink.com.au (A. Collier).

¹ Tel.: +971 4 3672436.

² PO Box 1099, Hamilton, QLD 4007, Australia. Tel.: +63 7 3868 1177.

deserves in the world of e-government literature and official international surveys [45,80]. For example because 2001, six consecutive e-government surveys conducted by the United Nations have included telecommunication infrastructure and level of education (as a socio-economic factor) as key components of a country's e-government development index. Those surveys concluded that the level of e-government development is largely commensurate with a country's level of economic development [71]. However, they barely touch on cultural values, religious belief, social norms, and social, political and legal systems, which may play very important roles in e-government implementation and adoption [10,49,64].

To contribute to the current e-government literature, our study aims to examine empirically whether and how national culture has an impact on e-government diffusion. Given the apparently important role that a national economy plays in e-government diffusion [71] and cultural dynamics [62,80], we also examine the possible relationship between the two.

The primary rationale for this study is to understand the relationship between culture and e-government diffusion so that strategies can be developed to improve e-government development and to identify areas for future research in the field of cross-cultural study and e-government diffusion. To explore this possible relationship, we select two sets of indexes from: (1) the GLOBE (Global Leadership and Organizational Behavior Effectiveness) project [37], and (2) the most recent United Nations e-government survey [71]. To develop credible conclusions from this international-level study, we use a sample of 55 countries from the [35] project for our statistical analysis.

Our study has three features that distinguish it from the existing literature. First, to our knowledge, our study is among the first to adopt the GLOBE approach to examining the possible effects of culture on e-government diffusion. Second, unlike other research, which treats the association between culture and e-government diffusion as a linear relationship or a clear causal linkage, we argue that the relationship between culture and e-government diffusion is contingent upon economic development. Third, the data sets used for our study are more recent than the data sets used in other studies: our study uses the GLOBE cultural dimension scores (compared to Hofstede's index scores) and the United Nations E-government Survey 2012s e-government index scores [71].

The remainder of this paper is organized as follows. The next section outlines the study's theoretical basis. Next, the paper reviews the key literature on culture and e-government diffusion and develops a research model and a series of hypotheses for empirical testing. After that, the paper describes the methods and measures used for statistical analysis. Next, results are presented and discussed. Implications, limitations and areas for future research are identified before we conclude.

2. Theoretical basis—contingency theories

In the management literature, contingency theories argue that organizational effectiveness is dependent on the congruency (i.e., fit) among several factors such as structure, people, technology and strategy. These contingency theories emphasize the importance of the effects of environment (a set of contingency factors) on performance and the complex relationships and interactions among environment, organizations and individuals/groups [25]. Child [15] argues that the variation of values and belief from one culture to another can have a significant effect on organizational structures and the notion of effectiveness, and that contingency theories should integrate culture into the study of interaction with environment. Many researchers have attempted to demonstrate that culture is an important contingency factor that determines the

interpretation of situational parameters [11,67,77]). Drawing on cultural contingency theories, Newman and Nollen [50] have conducted an empirical study of 176 work units of a large multinational corporation located in eighteen European and Asian countries. They have found that financial performance is higher in work units in which management practices are congruent with the host country culture.

The use of contingency theories is consistent with the central theme of this study, given that we are investigating contingency factors surrounding e-government diffusion. The contingency factors on which we focus are societal cultural practices and economic development. We argue that *cultural congruency* may affect the level of e-government diffusion in a nation.

Based on the theories of the Diffusion of Innovation [54] and the Technology Acceptance Model [26], studies show that a person's beliefs can influence attitudes toward e-government, which in turn can lead to a propensity to use and ultimately, actual usage behavior [4,13,18,58]. In line with those theories, we argue that e-government diffusion is directly associated with culture because it represents shared beliefs, values, social norms and attitudes (more discussion about this is provided in the next section). Therefore, we seek to explore e-government diffusion from a cultural perspective and examine what cultural characteristics of a nation may affect e-government diffusion. Based on the findings of this study, we are able to provide government policymakers with suggestions for improving e-government diffusion based on cultural issues. This remedies an existing gap in understanding resulting from the limited empirical research published in this field, particularly at a national level [57].

Although contingency theories have their merits, critics argue that contingency concepts need to be clearly defined and the relationships between the concepts need to be specified [66]. While taking contingency theories as the underpinning theoretical framework for this study, we have attempted to address these concerns by elucidating the concept of culture in terms of its various dimensions, identifying and examining empirically its relationships with e-government diffusion and economic development.

3. E-government diffusion and national culture

E-government has developed rapidly over the past decade and is gaining momentum in many countries around the world, according to the most recent United Nations survey [71]. The emergence and increasing expansion of e-government diffusion literature has corresponded to the rapid development of e-government. The majority of e-government diffusion research revolves around e-government technology (e.g., the usability of e-government websites), infrastructure and resources, user behavior and intentions drawing on various technology acceptance models, government policies and strategies, and socioeconomic issues such as access and the digital divide [5,9,13,18,29,32,44,52,57,64,74].

National culture, as a source of acceptable norms and behaviors, may influence the public's online expectations, preferences, and experiences and its attitudes toward e-government. However, there is a dearth of empirical and rigorous research addressing the importance of culture in e-government diffusion [57]. Among the few studies that examine the effects of national culture on e-government diffusion, most of them adopt Hofstede's cultural model and focus on one individual country (or a few) and/or a region such as Europe or Latin America; however, they do not project their findings to a global scale [2,7,14,29,57]. For example, a recent study of 26 European countries has found that national culture explains the differences in the levels of e-government adoption in the studied countries [7]. Aykut [7] has found that European countries with higher power distance or higher

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