E-Government Applications in Promoting Agricultural Productions:
A Comparative Study

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ABSTRACT

The rapid development of the e-government has dramatically changed how citizens and business interact with their government. There are many benefits for the e-government applications in terms of the administrative costs reduction and service integration. E-government websites can reflect the actual development of the regional e-government level. However, from the observation, there are many challenges and issues in the e-government application for the local governments. This paper is an attempt to compare the current development of the e-government in terms of improving the local agriculture productions between the eastern and western medium-sized cities in China. According to the results of this paper, there are many issues of the e-government application in terms of introducing and promoting the local agriculture productions in China. The suggestions for the local governments to improve their e-government application are given in last section.

KEYWORDS

China, Comparative, E-Government, Local Agriculture Production

INTRODUCTION

E-government refers to the use of information and communication technology by governments to provide digital services to citizens, government employees, business and other agencies online through the internet, at local, national or international level. There are many related researches focused on the issues of e-government application since the initial proposal of the concept for e-government (Venkatesh et al., 2012; Akman et al., 2005; Miranda et al., 2009). The advantages of e-government in timeliness, responsiveness, and cost containment are substantial (Evans and Yen, 2006). Almost all of cities in China have their own e-government websites, and the people is enjoying more convenient than before since the development of the e-government.

The benchmarking and assessing e-government is necessary to monitor performance and progress by individual countries and identify areas to improve. The studies exploring the issues related to the development of e-government application have become increasingly important and the evaluation of e-government has been proven to be complex and important in both theory and practice (Jones and Hughes, 2001; Serafeimidis and Smithson, 2000; Symons and Walsham, 1988; Tavana et al., 2013; Hsieh et al., 2013). The complexity is mostly due to the multiple perspectives involved, the difficulties in quantifying benefits, and the social and technical context of use.
The e-government literature has focused predominantly on implementation (Chan and Pan, 2008; Chan et al., 2008; Chen et al., 2009; Heeks, 2005; Layne and Lee, 2001; Liao and Peng, 2005; Nagi and Hamdan, 2009; Rose and Grant, 2010) security and authentication (Kalontzoglou et al., 2005; Tanka et al., 2005; Zhao et al., 2010; Zissis and Lekkas, 2011), technology acceptance (Hung et al., 2002; Lee et al., 2011; Lin, 2011), interoperability and connectivity (Choi and Whinston, 2000; Gottschalk, 2009; Jaeger et al., 2006), project planning and design (Batini et al., 2009; Ruuska and Teigland, 2009; Sarantis et al., 2011; Sharifi and Manian, 2010), and procurement and purchasing (Concha et al., 2012; Hardy and Williams, 2008). Tavana et al. (2013) assess a community’s overall e-government readiness from a Citizen Relationship Management perspective based on the group Analytic Network Process and TOPSIS. Hsieh et al. (2013) adopt a computational approach to measure the effectiveness of Taiwan’s city- and county-level e-government applications. Alawneh et al. (2013) identify the key factors that determine Jordanians’ e-satisfaction with e-government services portal. They also provide insights for both practitioners and governmental policy-makers to enhance e-government portals.

Regarding current indicators used to assess the operational performance of e-governmental services, three different trans-national professional organizations are conducting research of the developmental status and effectiveness of the governments in their e-service offerings around the world: NRI (the Network Readiness Index), BEG (the Benchmarking E-Government), and GES (the Global E-Government Survey). West (2007) from Brown University adopt the GES assessment method to evaluate effectiveness of governments’ web services among 198 countries, including Taiwan from 2000 to 2007. Rorissa and Demissie (2010) adopt the GES assessment’s methods to analyze the effectiveness of web services provided by every city government in the South Africa.

Although almost all of cities in China have their own e-government websites, many of them don’t introduce the local agriculture products which are important of the local economy development. This study is focused on comparing the application of e-government in promoting local agriculture products in western and eastern medium-sized cities in China. The remainder of this study is organized as follows. Section 2 introduces the related literature about e-government. Following is a brief introduction about the fuzzy theory and fuzzy TOPSIS (Theory of Order Preference by Similarity to the Ideal Solution) method which is employed in this research. Section 4 describes an empirical study of e-government application evaluation and comparison in promoting local agriculture products in western and eastern cities in China. Finally, major issues and challenges for local governments in promoting local agriculture products are examined and discussed.

**METHODOLOGY**

First, it is necessary to review the related Fuzzy Theory:

**Definition 1:** A Fuzzy set $\tilde{a}$ in a universe of discourse $X$ is characterized by a membership function $\mu_{\tilde{a}}(x)$ which associates with each element $x$ in $X$, a real number in the interval $[0, 1]$. The function of $\mu_{\tilde{a}}(x)$ is termed the grade of membership of $x$ in $\tilde{a}$. The present study uses triangular Fuzzy numbers. $\tilde{a}$ can be defined by a triplet $(a_1, a_2, a_3)$. Its conceptual schema and mathematical form are shown as follows:
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