Does National Culture Affect E-Procurement Implementations? 
Analysis of Differences through a Unified Model

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ABSTRACT

In the past decade, electronic mechanisms have started to overtake the conventional methods of procurement for both governments and enterprises because of the cost and time saving effects of e-procurement. Economic theory suggests that the success of e-procurement depends on the number of bidders who participate in procurement auctions. In this paper, the authors investigate the cultural factors that affect the usage and perceived acceptance of e-procurement process. This study identifies cultural barriers for adoption of e-procurement, which is essential for the success of e-procurement systems. The authors analyze extensive Eurostat datasets using Panel Data regression methods. Based on the empirical findings of the paper, the authors develop the Unified E-procurement Model (UEM). This model describes the cultural perspective for a successful e-procurement system by combining cultural dimensions, the Technology Acceptance Model (TAM), and the Competition in Auctions Theory (CAT). The UEM exposes the working dynamics of cultural factors that affect participation to online procurement auctions and presents total savings achieved through higher participation of enterprises. The empirical findings of the paper have practical implications and provide a road map for an efficient e-procurement system implementation.

Keywords: Cultural Dimensions, E-Commerce Adoption, E-Procurement, E-Procurement Systems, Trust, Unified E-Procurement Model (UEM)

1. INTRODUCTION

Governments and enterprises increasingly use electronic systems, online auction web sites to conduct procurement. Although it has been noted that e-procurement systems have been successful, the factors and mechanism that cause this success have not been examined thoroughly. In this paper, we focus on the cultural factors and empirically investigate the effects of cultural traits on the working dynamics of e-procurement systems. Since e-procurement systems lower procurement costs by increas-
ing number of bidders, participants to online procurement costs, we empirically analyze how different cultural factors affect participation to e-procurement. This paper focuses on two main research questions:

1) How do different cultural traits affect e-procurement adoption by enterprises?
2) Do the effects of cultural factors on e-procurement adoption differ as the size and the sector of the enterprise changes?

The unique cross-country dataset provided by the Eurostat allows us to conduct an extensive empirical analysis about cultural differences. The dataset contains data about e-commerce in 26 countries. This feature of the dataset supplies information about different cultural properties. This study contributes to the literature in the following ways; first, we develop the Unified E-procurement Model (UEM) to present the interaction between cultural traits, e-commerce behaviour of enterprises and e-procurement savings. We conduct empirical analysis about the interaction between cultural factors and e-procurement savings. Second, we empirically examine the implications of the UEM using the unique dataset of Eurostat. Third, we identify the cultural factors that play an essential role on e-commerce adoption and e-procurement savings. Finally, we analyze whether the effects of cultural factors differ as the size and the sector of the enterprise changes.

The emergence of internet technologies has changed the way organizations operate. The intense use of internet has eased the process for organizations to be aware of the newest and to get in contact with each other. The competitive environment has changed its structure in a way that all organizations can get information, raw material and provide goods and services all over the world. This easiness of reaching the network has influenced the purchasing and accounting lines of the organizations. Through intense use of e-commerce, there has been a significant change in how companies view purchasing function and procurement process (Marston & Baisch, 2001). Procurement function in organizations has transformed strategic management focus to generate cost and service advantages in the sense that order processing to be reduced allowing the procurement function to focus on other more value added activities such as supplier development (Yang, Wang, Wong, & Lai, 2008). As a consequence of internet technologies adapted to business uses, the function of procurement has migrated from paper-based processes to e-procurement (Thomson & Singh, 2001). Along with efficiency, promptness and ease of use, early adopters have become proficient in web-based procurement systems (Chang & Wong, 2010). In this context, e-procurement is defined as the result of applying e-commerce technologies to an organization’s purchasing activities (Garrido-Samaniego, Gutierrez-Arranz, & San Jose-Cabezudo, 2010). In other studies, e-procurement is explained as the streamlining of corporate purchasing process by eliminating traditional paper-based documents such as purchase orders and requisition forms which allows employees to gain a direct access to their supplier’s systems visually to confirm technical specifications (Teo, Lin, & Lai, 2009).

In a functional organization, the majority of organizational spending consists of purchasing (Nelson, Moody, & Stegner, 2001). Croom and Brandon-Jones (2007) mentioned that the e-procurement implementation would improve the purchasing process in organizations, which later was analyzed by Osmanbekov, Bello, and Gilliland (2002) who posit a theoretical model whereby the use of various Internet tools in the procurement process enables the members of buying centre to access a vast amount of information related to the products, reducing the time and the number of functional areas involved. Croom and Brandon-Jones (2007) point e-procurement as the use of integrated information technology systems for procurement functions including sourcing, negotiating, ordering and post-purchase review. Gebauer and Segev (1998) showed that 30% of organizational resources are spent on purchasing items. Nam (2002) cited that 20% of organization’s purchases represent 80% of total purchase value. Subramaniam and Shaw (2004) stated that large