



AN EMPIRICAL INVESTIGATION OF E-PROCUREMENT ADOPTION IN MALAYSIA: THE CASE OF SMES IN SABAH

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ABSTRACT

The introduction of e-procurement in Malaysia is timely and significant for both to the suppliers and government. More importantly, it is more transparent, efficient, and would certainly improve governance. Unfortunately, to promote greater participation and acceptance by suppliers, many businesses are still neglecting these technologies and still relying on traditional procurement when it comes to the purchasing of indirect goods. Therefore, the purpose of this study is to investigate the e-procurement adoption in Malaysia, specifically the small and medium-sized enterprises (SMEs) operated in Sabah. This study will fill the gaps by focusing on the adoption factors of e-procurement using organisational perspective model. The outcome of this study generates relevant information for both suppliers and government in recognising the e-procurement adoption factors, as well as enabling the organisation to highlight the most practical and significant factors in e-procurement implementation.

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1. INTRODUCTION

In a drive to improve the efficiency and effectiveness of public sector delivery, which is one of the supporting policies under the Economic Transformation Programme (ETP), the government of Malaysia is increasing the number of services available to the public online. In order to achieve this goal, many countries including Malaysia have adopted and implemented electronic government services for their stakeholders: citizens, businesses, government, and public sector employees (United Nations e-Government Survey, 2014). Based on the United Nations e-Government Survey (2016), Malaysia was ranked 47th from all countries around the globe and included as top 50 performers in e-participation in 2016. Initially, e-procurement is one of the e-Government projects of Malaysia with the aspiration to employ multimedia technologies to re-invent the way government operates with the hope it will improve

both how government operates internally as well as how it delivers services to the people of Malaysia. Recognising its importance not just for citizens but also for transparency and ease of doing business, the main purpose of this e-procurement project is to promote the values of transparency, cost saving, efficiency and effectiveness in service quality (Ibem et al., 2016; Nawi et al., 2016; Ronchi et al., 2010).

Although the benefits of adopting e-procurement systems are immense, many organisations, either B2B or G2B, are still taking the attitude of ‘waiting and seeing’ other organisations getting involved. Many factors have contributed to this issue that prevents them from maximising the true value potential of e-procurement systems, including: a) the cost associated with e-procurement; b) the lack of IT infrastructure and skill amongst the organisation; c) technical complexity-privacy; d) security; and e) standardisation within the business (supplier) and government sectors (Kaliannan et al., 2009), and these are the research motivation for the entire study. Based on limited capital, activities, and scale of production, the SMEs is the industry most impressed by the above factors and makes it difficult for them to adopt e-procurement applications. In this sense, more research is required to address these challenging issues. Unfortunately, evidence from literature indicates that the adoption of e-procurement in Malaysia is still at the infant stage, especially from SMEs perspectives. In this context, the following research objective was "to identify what are the main factors leading SMEs companies to adopt e-procurement for business processes".

For the last two decades, most studies (for both an empirical and conceptual study) have been conducted to explore e-procurement adoption in numerous industries such as construction and building industry (Hashim et al., 2014; Ibem et al., 2016; Ibem & Laryea, 2015; Mohd Daud et al., 2013), public sector (Ebrahim et. al., 2004; Kaliannan et al., 2009; Zaharah, 2007), and SMEs related industry appears to be at its nascent stage (Fernandes & Vieira, 2015; Nawi et al., 2016; Rowe et al., 2012). In addition, many of these studies have limited themselves to merely transfer the models and methodologies developed to analyse the e-procurement adoption (Gamal Aboelmaged, 2010; Mohd Daud et al., 2013; Venkatesh et al., 2012). There is a gap in terms of developing and testing a model to verify what factors affecting the adoption of e-procurement by SMEs as a whole, and not just by an individual or single perspective. In addition, the influence of “government policy” of e-procurement practices seems to be missing in the previous framework (i.e., Araújo & Zilber, 2016; Kaliannan et al., 2009). Additionally, the most command factors in technology adoption, namely organisation perceived usefulness and organisation perceived ease of use, was also ignored. These factors are highly significant to investigate due to e-procurement as the main procurement mechanism to be used by the government agencies and suppliers in Malaysia.

The paper proceeds as follows. Section two presents the literature review of e-procurement in Malaysia. This is followed by providing a snapshot of the methodology used, including the research design and data collection methods. The paper ends with a short conclusion and recommendation with the intention of ensuring the project achieves its intended objectives.

2. LITERATURE REVIEW

In Malaysia, it is important to understand the process of e-procurement adoption by organisations, where e-procurement understood as an innovation that is able to improve the organisations or company process and its productivity (Ibem et al., 2016). Therefore, there is a need for further investigation to fully understand the adoption factors of e-procurement, especially in SMEs perspective. One aspect of this tremendous research development that has shown great potential for improving the performance of the SMEs is the use of electronic communications and transaction processes, which is referred to as electronic procurement.

2.1 E-procurement and Technology Organisation Environment (TOE)

E-procurement refers to the purchase of goods and services for organisations (Turban et al., 2006), over the use of internet-based information and communication technologies (Bauasa et al., 2014; Kishor et al., 2006). In the year 2002, the Malaysian government has implemented an e-procurement system (known as “e-Perolehan”) and online tendering, as well as the online registration of companies and businesses in Malaysia (Nawi et al., 2016). The existing published works have explored the adoption of e-procurement in several areas of studies, including construction and building industry (Hashim et al., 2014; Ibem et al., 2016; Ibem & Laryea, 2015; Mohd Daud et al., 2013), public sector (Ebrahim et. al., 2004; Kaliannan et. al., 2009; Zaharah, 2007), as well as the SMEs related industry (Nawi et al., 2016; Rowe et al., 2012). Empirically, e-procurement has been explored over the last couple of years using many different theoretical approaches (i.e. TAM, TRA, TPB, UTAUT, DOI, or integration of all) in order to ascertain why it is that some people or organisation engage in e-procurement while others do not. Consequently, without any solid framework and measurement will lead to inconsistent explanation, while a strong and comprehensive conclusion for the entire adoption of e-procurement cannot be made. Therefore, it becomes evident that other factors may be involved that are contributing to this adoption processes. Certain features of SMEs like organisation structure, climates, leadership and culture will influence the adoption of an e-procurement system, and Technology Organisation Environment (TOE) model is the best framework to describe these features (Hassan et al., 2014).

TOE model of Tornatzky and Fleischer (1990) accept a bland arrangement of variables to foresee the probability of EC appropriation. In TOE framework, it identifies three aspects of an enterprise's context that influence the process by which it adopts and implements a technological innovation: technological context, organisational context, and environmental context. The key issues that prevent many SMEs companies from maximising the true value potential of e-procurement systems are; issues pertaining to technical complexity-privacy, security, standardisation, within the supplier and, high cost for capital expenditure to ensure the rapid rollout of e-procurement initiatives (Hassan et al., 2014). However, there is a general interest in making good use of advanced information technologies (i.e. e-procurement) to improve the SMEs processes. It is evident from this that the attributes of e-procurement technologies, adopter and perceived innovation characteristics and the environment influences are amongst the factors that can influence the decision to adopt e-procurement by SMEs organisations. It was also observed that limited of the existing studies explored the influence of other industries on the adoption of e-procurement in the SMEs companies. In addition, the ability to integrate TOE with

other models such as DOI, with each adoption predictor offering a larger number of constructs than the original provides richer theoretical lenses to the understanding of adoption behaviour. Therefore, there is a need to explore this further, particularly in a developing country like Malaysia, where the literature on e-procurement in SMEs is very limited.

3. METHODOLOGY

We proposed and tested a theoretical framework to answer the research question in order to assess the factors that influence the e-procurement adoption. Since the focus of the current research is on e-procurement adoption by SMEs organisations, the DOI theory and organisation and environment (TOE) framework by Tornatzky and Fleischer (1990) are considered to be relevant in this study. Three main constructs were analysed, namely, adopter characteristics, perceived innovation characteristics, and environmental influence. All constructs are measured using multiple-item perceptual scales, using pre-validated instruments from prior research wherever possible, and were reworded, where necessary, to relate specifically to the context of e-procurement adoption and implementation. Figure 1 and Table 1 below shows the proposed framework and questionnaire items of the study, respectively.

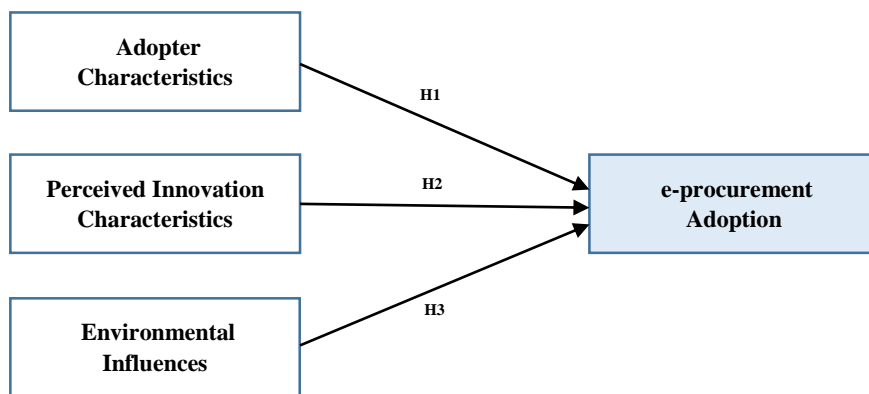


Figure 1: Proposed theoretical framework of the study.

Source: Adapted from Tornatzky and Fleischer (1990).

To answer the research objective, an empirical study will be conducted using a survey of 250 (expected) companies that incorporated eProcurement into their business processes. The population studied was the registered companies or suppliers with the Ministry of Finance (MOF) and whom is e-procurement enabled operated in Sabah. The sample (SMEs) selection processes are based on purposive sampling procedure. Smart PLS is employed to analyse the data includes the measurement model and the structural model. We tried to identify the relationships of this adoption, which is understood in terms of the intensity of its use in various company areas or business.

Table 1: Proposed questionnaire items.

Variable	Item/ Attributes	Total Item	Theoretical Source
Adopter Characteristics	• Organisation Size	7	Araújo and Zilber (2016)
	• Organisational Structure	7	Chen and Chang (2012)
	• Innovativeness	5	
		(19)	

Table 1(continued).

Variable	Item/ Attributes	Total Item	Theoretical Source
Perceived Innovation Characteristics	• Relative Advantage	9	Araújo and Zilber (2016)
	• Compatibility	5	Kaliannan et al. (2009)
	• Observability	6	
	• Uncertainty	7	
	• <i>Organisation Perceived Usefulness</i>	12	
	• <i>Organisation Perceived Ease of Use</i>	6	
		(45)	
Environmental Influences	• Competitive Pressures	7	Araújo and Zilber (2016)
	• Network Externalities	4	Ibem et al. (2016)
	• <i>Government Policy</i>	5	
		(16)	
e-Procurement Adoption	• e-Procurement Adoption	10	Kaliannan et al. (2009)
		(10)	

4. SIGNIFICANCE OF THE STUDY

The main contribution of this paper is related to the fact that, despite several studies about company or organisation adoption of e-procurement, there are few studies about this adoption by the SMEs, taken as a whole, understanding what factors are perceived as crucial in order to adopt this tool in its business processes. Evidently, there are limited empirical studies in the literature on the SMEs adoption of e-procurement in a country, that is, at the micro-level. Nonetheless, such a study will help SMEs to create or develop policies, strategies, and procedures to execute e-procurement. This study extends the current knowledge of e-procurement adoption by filling research gaps in the existing literature. The current study is novel in the way it looks at different viewpoints, by testing the adoption model based on organisational perspective. On top of that, there is considerable scientific interest to determine whether various dimensions (i.e. Adopter characteristics; perceived innovation characteristics; environmental influences) differ in their e-procurement adoption process, with the view of gaining an understanding of the drivers, benefits, barriers, perceived critical success factors and the organisational performance post-implementation.

5. CONCLUSIONS AND EXPECTED OUTCOMES

E-procurement has become popular among businesses, industries, and governments, and a powerful tool to improve effectiveness and efficiencies as well as improve the service quality of its adopters (Nawi et al., 2016). However, due to their common role as suppliers, SMEs are especially challenged by today's turbulent business conditions. E-procurement projects fail because of lack of adoption. A key obstacle here is that of individuals or people. The individuals who have created e-procurement capacity have done it so valuable, yet still cannot seem to appreciate the noteworthy cost and time savings. The outcome of the study is expected to contribute to knowledge development by identifying the factors considered important in the decision to use e-procurement by SMEs in Sabah. Many factors will contribute to this adoption process, but the question is whether the SMEs are ready to participate in it or not. Thus, more than an opportunity, SMEs have to see it as a necessity, as a way of survival (Vitkauskaite & Gatautis, 2008).

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