The Determinants of Adoption of Cloud-Based ERP of Nigerian’s SMES Manufacturing Sector Using Toe Framework and Doi Theory

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ABSTRACT

Adoption factors relating to enterprise resource planning (ERP) have been studied quite extensively over the years. Most of the earlier studies on cloud ERP have focused only on technical and operational issues. A few studies have addressed the adoption of cloud ERP from the user’s perspective, mostly assessing the effects of the innovation characteristics or the contextual factors. Very few studies to date have conducted a holistic evaluation of both the direct and indirect effects of the determinants on cloud ERP adoption in manufacturing SMEs. Therefore, this study aims to explore and gain an understanding of the determinants of adoption factors for cloud ERP and its relative advantage to small and medium enterprises (SME) organisations. The manufacturing SMEs in Nigeria are specifically targeted. This study also seeks to develop a research model that integrates the innovation characteristics and technology-organisation-environment (TOE) perspectives that underlie its adoption.

KEYWORDS

Cloud Computing, Enterprises Resource Planning (ERP), Manufacturing, Nigerian, SMEs

INTRODUCTION

The Small, medium enterprises (SMEs) are constantly aimed at finding alternatives to combine their IT infrastructures and services and at the same time raise their investment return (OECD, 2013). Enterprise resource planning systems (ERPs) is an IT-based system established within the modern business environment, which creates the primary information systems software and the distinctive organisational model of computing (Bodlaj et al., 2018). These systems integrate the company’s information and all the functional areas as well as the external organisational information-based processes in order to strategise and manage the entire company’s resources effectively. (Gupta et al., 2018; Yaokuma et al., 2017). The ERP adoption has great benefit to the company as it assists in; providing better customer service, cost reduction, organisation empowerment, better quality and...
achieved.

Background

Theoretically, C-ERP has been described as a new development in the field of information system (IS) (Armbrust et al., 2009), with this advancement comes a considerable potential which business within industries and governments. C-ERP provides crucial opportunities for all organisations and enterprises, including SMEs, to have more flexible and easy-running business models (AL-Shboul, 2018). Many studies in the field of Information Systems (IS) have highlighted and discussed the significance and effect of adopting C-ERP (Marston et al., 2011 and Saya et al., 2010). However, research on E-ERP adoption seems to be one of the less explored and examined topics in the IS domains, particularly for SMEs of developing countries (Wu et al., 2011). Current research into C-ERP adoption in developing countries remains limited. Conversely, antecedents’ factors of C-ERP in the developed countries is well established in information systems literature. To a large extent, the technological, organisational and environmental (TOE) contexts of C-ERP between the developed and the developing countries differ. For instants, the technological infrastructure in the UK, as a developed country is far more advanced than that of Nigeria as a developing country (Richard et al., 2013). Moreover, it is well noted in the information systems literature that research findings from the developed countries do not directly apply to the developing countries due to contextual differences (Avergou, 2009; Prince, 2016; and Heeks, 2002).

However, in Nigeria context as a developing country, it was discovered by many researchers that the C-ERP is a comparatively new research area (Badewi et al., 2018), as there is few research work being done on the C-ERP field related to SMEs, particularly on the specific sector. Huang et al. (2018) examine the employees’ perception of IT, and Telecommunication companies and the user devices support regarding the extents of cloud adoption and find the current issues as well as inspiring factors affecting the adoption of cloud computing in Nigeria. He concluded that appropriate knowledge on the benefit and risk of cloud by the cloud providers, providing free trial services and the existence of more service providers can encourage the adoption of cloud computing in the country. As such, inadequate studies for assessing and addressing factors of C-ERP adoption, and the lack of a comprehensive model for SMEs, with simultaneous consideration of organisational perspective on adoption. With regards to this gap highlighted from the literature, this study argues that there is a need for a study, which will not only take into account the factors that influence cloud-based ERP adoption in SMEs but also will integrate the innovation factors into the TOE framework towards adoption Huang et al. (2018).

PRIORITY RESEARCH ON CLOUD ERP

Despite the hyped advantages of this new technology, there is evidence which suggests that not all companies are hastening to adopt cloud-based solutions (Seethamraju, 2013; Polyviou, 2015). Several reasons contributed to the situation which mainly consists of the lack of industry-specific conformity to standards, having an unruly technology that has not reached a level of maturity, and a high level of related costs and risk (Madrid-Guijarro, 2009; Borgman, 2013; Navaneethakrishnan,
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