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Exploring the Factors to Green IT Adoption of SMEs in the Philippines

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ABSTRACT

Green IT adoption is a sustainable use of computing resources to address the growing environmental challenges resulted from business activities. Drawing from this need, this article aims to examine the influential factors that affect Green IT adoption in SMEs. This article is an initial attempt to understand the Green IT adoption experience of SMEs in the Philippines. A framework is created encompassing the interactions of factors that facilitate the successful Green IT adoption of SMEs in developing countries. The framework was then analyzed with data from multiple case studies of Philippine SMEs. The results suggest that individual attitude, IT infrastructure, managerial support, availability of budget, and government support have significantly facilitated Green IT adoption in SMEs. The results of this article will assist business owners, policymakers, and industry associations to further Green IT adoption by SMEs in the Philippines. Practical and research implications are presented.

KEYWORDS

Developing Countries, Environmentally Sustainable Computing, Green Computing, Green IT, Qualitative Analysis, Sustainability, Technology Adoption

1. INTRODUCTION

Green Information Technology (GIT) allows the use of resources in sustainable manners, both in the area of environmental protection and business resource efficiency. GIT covers a broad range of organizational activities, human, and managerial practices related to the information technology infrastructure and business operations in organizations (Loeser et al., 2017). GIT adoption has resulted in new approaches to doing business which offers substantial benefits to organizations through resource efficiency achievement by reducing business footprint while enhancing performance. The growth of GIT adoption has also enabled a greater appreciation of its environmental benefits and awareness of sustainability issues and challenges in organizations. Thus, GIT adoption is predicted as the driver for sustainability among organizations.

The adoption of GIT has certainly provided useful benefits that enabled organizations to enhance their economic and environmental performance (Gholami et al., 2016) and develop better collaboration with their business partners (Kevin et al., 2015), and customers (Radu, 2016). The benefits suggested by adopting GIT have not only influenced for large firms to embrace it as well as the growing Small-Medium-Enterprises (SME) (Lim, 2015). The SMEs involvement in GIT adoption has afforded them better sustainable opportunities that they would not be able to achieve in the traditional notion on the adoption of information technology. Therefore, by involving in GIT adoption, SMEs have the opportunity to create a new market and sustain and reduce the impact of business on the environment, and leverage to remain competitive (Weng and Lin, 2011).

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Despite the growing benefits of GIT adoption within organizations, a handful of studies is available on exploring the factors facilitating the successful adoption of GIT in SMEs, especially in developing countries (Kamaruddin et al., 2013; Piaralal et al., 2015). For example, the Philippines is one of the emerging economies with a growing number of SMEs in Southeast Asia region estimated at 774,664. The SMEs represent 99.6 percent of the total number of enterprises in the country. The Philippines was chosen as a reference to a developing world as it represents typical features of developing countries (Seyal and Rahim, 2006; Lertwongsatien, and Wongpinunwatana, 2003). The Philippines, despite the benefits from the stable economic development at an average of 5.2% between the period of 2010 and 2014, the e-Readiness Index (ERI) and Network Readiness Index (NRI) are still very low. However, The Philippine government started to dedicate a fraction of Gross Domestic Product (GDP) to Information and Communications Technology (ICT) adoption, to address the lagging technology adoption situation compared with other developing countries (Indjikian and Siegel, 2005). This situation is further difficult to understand as there are very few studies conducted to analyze the development of GIT adoption among SMEs and in the Philippines. Thus, it is necessary to understand the factors that facilitate the successful adoption of Green IT in organizations, most especially in developing economies. Therefore, this study attempts to investigate the fundamental research question:

What are the underlying factors for successful Green IT adoption in developing countries?

Hence, GIT adoption by SMEs has implications for the Philippines and the economies of other developing economies.

2. LITERATURE REVIEW

2.1. Green IT

The environmental challenges covering the rising carbon footprint emissions, depletion of natural resources and increasing waste ending in landfills is gaining more attention and discussion among public and private stakeholders (Hilty and Aebischer, 2015). These challenges resulted in the formation of accords in various regions to understand the implications of technology use on human safety, business, technology development, and environmental sustainability (Nisha et al., 2013). Conversely, it is a significant area of research in the information systems and environmental education. Thus, sustainability through Green IT was conceived as an important strategic focus for organizations. GIT is an efficient resource consumption using IT infrastructure as well as applying managerial and human practices, and organizational policies towards sustainability (Molla et al., 2014). To date, many organizations have been proposing their GIT agenda (Ardito and Morisio, 2014), and anchoring it to the sustainability mission and vision (Hernandez and Ona, 2016), to realize the full benefits of GIT, both for economic and environmental performance. Previous studies suggest that adoption of GIT in organizations have been very limited (Khor et al., 2015), especially in developing countries (Hernandez and Ona, 2015). It requires technological and organizational readiness, and support from the external environment to progress from simple to broad – complex GIT adoption activities (Deng and Ji, 2015). Hence, there is a greater need to explore and initiate GIT adoption in organizations in developing economies.

2.2. Overview of the Philippines SME Industry

The Philippines SMEs is one of the fastest growing sectors and plays a vital role in the creation of quality jobs, opening doors of economic activities, and diversification of investments in the entire country. In 2015, the SMEs provided a total of 3, 532, 935 jobs or 62.3 percent of total jobs generated by all types of business establishments and (Lanzona, 2015).