Chapter 99
Investigating the Determinants of IT Professionals' Intention to Use Cloud-Based Applications and Solutions:
An Extension of the Technology Acceptance

Sabah Al-Somali
King Abdulaziz University, Saudi Arabia

Hanan Baghabra
King Abdulaziz University, Saudi Arabia

ABSTRACT

Using a sample of 155 IT professionals from private and government organisations in Saudi Arabia, the authors tested a model of cloud-based applications adoption that is influenced by individual characteristics (represented by personal innovativeness in the domain of IT), organisational context (represented by the accessibility of the technology), technological context (represented by perceived vulnerabilities) and social context (represented by social image). The model explained 74% of the intention to use cloud-based applications. The findings show that accessibility of the technology, perceived vulnerabilities, individual characteristics and social image are all important determinants for using cloud applications and solutions. The findings will potentially contribute to research and practice by revealing the crucial factors that will impact IT professionals' intention to adopt cloud computing in the context of developing countries in the Arab world. Theoretical and practical implications of the findings are presented.

1. INTRODUCTION

In the current digital age, organisations are using advanced Information Technology (IT) applications such as cloud computing to reduce their IT operations and maintenance costs. In fact, cloud computing has changed the nature of computing and how business operates. Cloud computing (CC) can be defined as accessing of shared data and applications over a network environment without concern about ownership or management of hardware or software (Scale, 2009). CC allows organisations to use a set of IT resources such as networks, hardware, storage devices and applications) that can be provisioned and released through the web (Thompson & Havard, 2015). Moreover, cloud-based applications and solutions add value to business by reducing operating costs and increasing operational efficiency. In fact, many of the big players in the software industry such as Amazon, Google and Microsoft have entered the development of cloud services and are delivering various cloud-based services.

Recently, research trends on cloud computing have been focused on the technology, benefits, data privacy and security of cloud computing at the organisational level. However, little research attention has been devoted to explore the intention to adopt and use cloud applications at individual level and how contextual factors can influence diffusion of cloud computing applications and solutions (Opitz et al., 2013).

This paper proposes an extended model for the use of cloud computing applications and solutions by IT professionals. In fact, it is believed that compared with end users, IT professionals may show trivial differences in their technology adoption and use (Chau and Hu, 2002). In addition, IT professionals' attitudes on the basis of their beliefs and/or intention to use cloud applications have been barely studied in the literature. It is noteworthy that, the decision to use specific technology is dependent on how the technology is understood and perceived by IT professionals and practitioners. The objective therefore is to understand the factors that may influence or discourage IT professionals' intention to use cloud-based applications and solutions. Hence, this study conducts a field study to empirically demystify IT professionals' intention to use cloud-based applications by testing an extended technology acceptance model which will be used to answer the following questions: (1) What are the factors that influence the intention to use cloud-based applications and solutions by IT professionals? (2) How can existing technology adoption theories be used to model the intention to use cloud computing?

This paper is structured as follows: the following section briefly discusses cloud computing technology, and provides a picture of its types, deployment models and the state of cloud computing in developing countries. Next, in Section 3, we discuss the theoretical approach and put forward the hypotheses to be tested. In section 4, we then explain the main method employed and in the penultimate section we carry out the empirical analyses. Finally, we present the research findings and concluding remarks, as well as future research recommendations.

2. CLOUD COMPUTING TECHNOLOGY

Cloud computing is seen as the next-generation of IT architecture designed to deliver numerous computing services. Stieninger & Nedbal (2014) note that, the definition of the term cloud computing is still not clear, even for IT experts and mnagers. According to the National Institute of Standards and Technology (NIST), cloud computing is defined as "A model for enabling reliable, on-demand network access to a communal pool of configurable hardware and software resources that can be quickly provisioned and

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