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An Empirical Study of Cloud-Based E-Governance Services Adoption in India

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ABSTRACT

This article studies the factors affecting the adoption of the DigiLocker cloud-based E-governance service in India. This study integrates the e-GAM and UTAUT model to develop a hypothesized framework to investigate the DigiLocker E-governance service adoption in India from a citizen's perspective. The survey was conducted among citizens in Pune city and its suburbs using a structured questionnaire. The confirmatory factor analysis was done using the PLS-SEM technique. The results of this cross-sectional research explain that performance expectancy, effort expectancy, facilitating conditions, social influence, perceived awareness, computer self-efficacy, multilingual option, perceived quality of information, perceived response and perceived trust influence the behavioral intention and actual usage of DigiLocker cloud-based E-governance service. The outcome of this article is valuable to policymakers for providing better E-governance services. This research presents vital insights and highlights the factors that influence the cloud-based E-governance service adoption in developing countries like India.

KEYWORDS

DigiLocker, e-GAM, E-Governance, PLS-SEM, UTAUT

1. INTRODUCTION

The United Nations (UN) E-government Development Report, 2016, ranks India, 107 among 193 countries with a score of 0.463 on the UN E-government Development Index for 2016 (UN E-government Survey, 2016). In 2015, the Government of India (GoI) launched the Digital India Program with the aim to bridge this gap by fostering a climate of investment in digital infrastructure, improving digital literacy among the citizens and provision of online services to the citizens. The Digital India Program provides key emphasis on the E-governance services in India with the objective to change India into a digitally empowered economy and society. The GoI has come up with the framework of 'e-Kranti' under the Digital India program. 'E-Kranti' mainly focuses on e-governance to provide government services through an electronic medium to the citizens. It ensures an economical cost of e-governance services with efficiency and transparency of services (NeGD, Policy Document 2016).

The use and application of ICT and internet-based web applications by the government for the provision of information and public services to the citizens is defined as E-government (Irani et al., 2005; Freeman and Loo, 2009; Sivarajah et al., 2015, 2014; UN E-Government Survey, 2016). Enhanced connectivity and better access raise the effectiveness and efficiency of e-governance services (Lin et al., 2011, Sun et al., 2015, Sá et al., 2016). E-Governance services are provided in different countries, however, there are challenges faced regarding its adoption and use. Prior studies discussed

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that in developing countries, it faces obstacles like lack of awareness, infrastructure, technical skills, human resource capacity, well defined government regulation and inexpensive technology (Irani et al., 2007; Rahman et al., 2012; Dwivedi and Irani, 2009; Alshehri et al., 2012; Gupta et al., 2008; Al Awadhi and Morris, 2008; Ibrahim & Ithnin, 2016).

India is a land of millions of students, a million workplaces and billions of citizens who avail government services. Millions of transactions and millions of documents exchange hands every day. These documents include school leaving certificates, degree certificates, birth certificate, electricity bill, water bill, property tax bills, driving license, Voter ID/Election card, PAN card, no objection certificates and Aadhar Card - unique identification number issued by the Indian government to every individual resident of India. Huge efforts are invested in creating these documents by the various government agencies and also in collecting them by the consumers. There lurks the fear of vital documents getting tampered with or even getting lost. Every single document is of utmost importance for the citizens in the process of getting admission to colleges and universities and for the creation of passport and Visa. There is a mad frenzy for documentation and it calls for humongous efforts on the part of citizens.

In this era of digitization, it is common that citizens have to transfer documents through e-mail, document sharing portals or cloud storage apps. However, the need of the hour is an online document sharing system that is authorized by the Government. This is the reason, in 2015, Department of Electronics and Information Technology (DeitY), GoI started the DigiLocker services. The main objective of DigiLocker is to provide a public cloud that offers the private space to digitize all the records and documents and make it accessible to citizens on a real-time basis. Every citizen can store their important personal documents in digital form, as DigiLocker is a cloud-based virtual storage. DigiLocker will facilitate paperless governance and improve the authenticity of e-documents. It also aims to make the documentation service easy and decrease the administrative cost spending by GoI. The DigiLocker website and app provides services like verification and issuance of documents and certificates which will help citizens to get rid of physical documentation (DigiLocker Brochure, 2015).

After the review of the objectives, challenges, and benefits of DigiLocker, it necessary to study the various antecedents that affect the adoption of an e-governance service like DigiLocker from a citizen's perspective. As cloud-based services are still in the infancy stage (Sibya, Venter & Fogwill, 2012), it is susceptible to risks such as privacy, security and reliability issues which act as major barriers to the user adoption of these technologies (Hackney, Sivarajah, Omar, Lee, Irani & El-Haddadeh, 2017; Almarabeh, Majdalawi & Mohammad, 2016; Ali, Soar & Yong, 2016).The success of such an initiative eventually lies in the citizen's adoption, acceptance and usage in a developing country like India. The realization of the benefits of e-governance services is hindered by the lack of e-governance adoption by the citizens (Zhao et al., 2014). For the success of online e-governance service, it is imperative to study its adoption which leads to the better understanding of the citizens' needs (Ozkan & Kanat, 2011). If documents are processed online, it results in again in efficiency (Savoldelli et al., 2014). The fruitfulness of any technology lies in its use (Venkatesh et al., 2008). This study investigates the adoption of DigiLocker cloud-based e-governance service to fulfill this gap and provide meaningful insights. The research question is hence devised as:

RQ1: What is the prevailing situation in India regarding the adoption and usage of DigiLocker e-governance service and what are the ramifications for the future of DigiLocker e-governance service.

2. LITERATURE REVIEW

There are many studies on e-Gov adoption using different adoption theory models like the DOI - Innovation Diffusion Theory (Rogers, 1995), TAM – Technology Acceptance Model (Davis, 1989), TRA - The Theory of Reasoned Action (Fishbein and Ajzen, 1975), TPB - Theory of Planned