International Journal of Public Administration in the Digital Age
Volume 12 • Issue 1 • January-December 2025

Cloud Computing Adoption in Government Organizations in Developing Countries:
A Systematic Literature Review and Future Research Directions

Raghed Alkhasawneh
https://orcid.org/0009-0004-4160-4385
Universiti Tenaga Nasional, Malaysia

Zaihisma Che Cob
https://orcid.org/0000-0003-0875-9188
Universiti Tenaga Nasional, Malaysia

Aliza Binti Abdul Latif
https://orcid.org/0000-0002-8293-6130
Universiti Tenaga Nasional, Malaysia

ABSTRACT

Cloud computing adoption in e-government offers significant benefits yet presents unique challenges, particularly for developing countries. While existing research has focused on technical aspects, this study expands the analysis to investigate broader determinants of cloud adoption from technological, organizational, environmental, and individual perspectives. A systematic literature review was conducted across six scholarly databases and identified 40 primary studies. The findings emphasize the importance of adopting an integrated organizational-individual perspective to understand cloud adoption better. The study proposes a multi-dimensional conceptual framework for cloud adoption in government organizations and recommends further empirical validation of this model. This review provides decision-makers and managers in the government sector with practical insights for addressing adoption challenges, enhancing service delivery, and increasing cloud computing acceptance rate within government organizations.

KEYWORDS

Cloud Computing, E-Government, Government Organizations, TOE Framework, Systematic Literature Review, Developing Countries, IS/IT Models

INTRODUCTION

In recent years, many countries have been modernizing their governmental institutions by incorporating innovative technologies into their operations. With this strategic shift they aim to improve service delivery and encourage citizen engagement (Al-Dwairi & Jditawi, 2022; Alarefi, 2023). E-government initiatives, at the forefront of these technological developments, leverage information and telecommunication technologies to deliver services electronically (Abu-Faraj et al., 2023). These initiatives center on embracing new technologies and improving interactions among governments, stakeholders, and citizens (Sihotang et al., 2022). Despite progress, many e-government

DOI: 10.4018/IJPADA.368246

initiatives, particularly in developing nations, including those in the Middle East and North Africa (MENA) region, continue to face substantial obstacles in realizing the full potential of digital government services. Global data indicate that the success rate of e-government services stands at 35% in developed countries and falls to just 15% in developing nations (Abied et al., 2022b). The low success rate in developing countries can be attributed to a range of obstacles and challenges. Common barriers impeding the transition to e-government projects in these regions include inadequate information technology (IT) infrastructure, limited financial resources, technical difficulties, and a shortage of skilled human resources (Abied et al., 2022b; Al Mudawi et al., 2022; Alkhilani et al., 2024b; Qatawneh, 2024). Addressing these challenges requires innovative solutions that can enhance the scalability, efficiency, and accessibility of government services, with cloud computing emerging as a promising technology to support these efforts (Assaf et al., 2021).

The National Institute of Standards and Technology defines cloud computing as a model that enables on-demand, flexible access to a shared pool of computing resources, including networks, servers, and storage, with minimal management effort and cost (Shirpoor et al., 2023). Furthermore, cloud computing is valued for its potential to reduce business costs, enhance flexibility, and enable organizations to respond quickly to environmental and market changes. It offers scalable, flexible infrastructure that is essential for government operations (Phuthong, 2022). The potential benefits of cloud computing have encouraged many governments across different regions of the world to integrate it into their e-government systems (Qatawneh, 2024). For instance, Japan, the United States, and Singapore have made significant progress in transitioning their government services to the cloud. Their aim is to achieve scalability and enhanced service delivery in a cost-effective manner. For example, the U.S. General Services Administration achieved a 72% cost saving and 99.9% less downtime by switching to cloud services (Abied et al., 2022b; Qatawneh, 2024). Similarly, the governments of the United Kingdom and Australia have incorporated cloud computing into their national strategies to reduce costs and enhance infrastructure (Abdulkadhim Alwan & Bahari, 2024). Furthermore, Gartner reports indicate that, as of 2018, 47% of government organizations worldwide had adopted cloud technologies, with this figure expected to rise in the coming years (Islam & Karlsson, 2021); the reports also indicate that government organizations' expenses will account for up to 45% of the total global enterprise IT budget by 2026. Despite the significance of cloud technology, many government organizations, notably in developing countries, are still struggling to transition their operations to a cloud environment. Several factors contribute to the slow adoption rate of cloud computing, including security concerns over governmental data, inadequate IT infrastructure, trust issues, the lack of standardized regulations, and a shortage of qualified IT personnel (Koc et al., 2022).

The academic research on cloud computing is increasing, highlighting its significance to scholars and practitioners worldwide. Although existing literature addresses technical issues, optimal strategies, and the adoption and diffusion of cloud computing, comprehensive investigations are still needed to fully understand and address these complex topics. For example, Al-Haideri et al. (2022) conducted a bibliometric study on the cloud adoption in e-government services spanning 2009–2021; this study was aimed at identifying the most cited trends in cloud adoption, with specific attention to the prevalent countries and authors in this field. Additionally, Abied et al. (2022a) performed a systematic review covering the years 2010–2020 that examined the factors, methodologies, theories, and models utilized during this time. More recently, Alkhilani et al. (2024a) undertook a review from 2016 to 2022, focusing on the principal factors influencing adoption and the most frequently employed theories and models in cloud-based e-government services. Collectively, this body of research underscores the critical importance of government cloud adoption and provides substantial evidence to bolster ongoing efforts to align with the rapid advancements in emerging technologies, thereby expanding the overall understanding of the key factors and motivators.

However, to date, no comprehensive review has been performed to examine the adoption and acceptance of cloud adoption in government organizations from the perspectives of key determinants, barriers, and strategies to overcome adoption challenges at both individual and organizational levels.