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Acceptance and Usage of E-Government in Developing and Developed Countries

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ABSTRACT

The acceptance of electronic government (e-government) has become a critical component of public sector transformation, aimed at enhancing service delivery, transparency, and citizen engagement. This review article examines the patterns, challenges, and enablers of e-government acceptance and usage in both developed and developing countries. Through a comparative analysis of empirical studies, policy documents, and global benchmarks such as the United Nations E-Government Survey, the paper highlights the stark contrast in implementation outcomes between high-income and low- to middle-income nations. Developed countries such as South Korea, the United Kingdom, and Singapore demonstrate high levels of e-government maturity, driven by strong ICT infrastructure, high digital literacy, and robust institutional frameworks. Conversely, developing nations face challenges including limited infrastructure, low public awareness, digital illiteracy, and weak policy environments, which collectively hinder widespread acceptance. Despite these disparities, the study underscores that socio-economic status alone does not guarantee e-government success; instead, context-specific strategies, inclusive digital policies, and user trust are essential to achieving sustainable and equitable digital governance. The findings offer valuable insights for policymakers and practitioners aiming to bridge the digital divide and enhance e-government readiness globally.

1. INTRODUCTION

In the digital age, governments worldwide are increasingly turning to electronic governance (e-government) systems as a means to enhance public service delivery, increase transparency, reduce bureaucratic inefficiencies, and improve citizen engagement. E-government refers to the use of information and communication technologies (ICTs) by government agencies to deliver services, information, and governance to citizens, businesses, and other arms of the government (Chen et al., 2006; Kibria & Hong, 2024). The implementation of e-government has seen significant progress in many developed nations, where advanced infrastructure, high internet penetration, and ICT literacy have facilitated acceptance and usage.

Countries such as South Korea, the United Kingdom, and Singapore have achieved high rankings in global e-government development indices, often leading in both service delivery and citizen participation (Lee & Moon, 2020; UNDESA, 2018). Conversely, in developing nations, the acceptance and implementation of e-government face numerous challenges. These include inadequate infrastructure, low levels of digital literacy, limited access to the internet, and concerns regarding data security and trust (Ahmad et al., 2012; Dewa et al., 2014). Additionally, social and cultural factors such as resistance to change and preference for traditional face-to-face services further hinder acceptance (Yadav & Tiwari, 2014). Despite these barriers, e-government remains a promising tool for fostering sustainable development and improving governance in resource-constrained environments (Eldresi et al., 2012; UNCTAD, 2020). This review paper aims to examine and compare the acceptance and usage of e-government systems for both developed and developing nations. By analyzing key success factors, common obstacles, and national experiences, the paper seeks to highlight the critical differences and shared lessons that can guide future e-government strategies. Understanding these dynamics is essential to designing inclusive and effective digital governance frameworks that account for socio-economic disparities and local context.

2. RELATED WORK

The acceptance and usage of e-government systems vary significantly between developing and developed countries due to differences in infrastructure, digital literacy, and socio-economic conditions. In developed nations, widespread internet access, advanced ICT infrastructure, and supportive government policies have facilitated higher levels of acceptance and citizen engagement with e-government services. Countries like South Korea and the United Kingdom have successfully integrated digital technologies to streamline public administration and improve service delivery. In contrast, developing countries often face challenges such as limited technological infrastructure, low awareness, resistance to change, and lack of trust in digital platforms, which hinder the effective implementation and usage of e-government. Understanding these disparities is crucial for shaping inclusive digital strategies that address the unique needs and barriers faced by each context, ultimately promoting better governance and service accessibility across all nations.

2.1. DEVELOPED COUNTRIES EXPERIENCES

According to the data presented in Tables 2 and 3, the Republic of Korea ranked first globally in e-government development both in 2014 and 2018, outperforming numerous advanced economies. This leading position can be attributed to the country's robust telecommunications infrastructure, strong educational initiatives aimed at enhancing ICT competencies, and a high per capita gross domestic product (GDP) (UNDESA, 2018). The Korean government began implementing its e-government system between 2001 and 2002 through the execution of 11 key initiatives and the enactment of legislation dedicated to e-government. From 2003 to 2007, it pursued 31 roadmap projects that formed the foundation for inter-agency connectivity and integration. Starting in 2008, a comprehensive National Informatization master plan was developed to enhance the e-government framework, guided by the principles of openness, sharing, and collaboration. Building on this progress, the government introduced the Smart Government initiative between 2011 and 2015 (Chung & Kim, 2019). South Korea's e-government program has reached a stage of complete digital transformation in public administration, delivering advanced services to both citizens and businesses through multiple platforms that support seamless communication and transactions (Lee & Moon, 2020).

Singapore's e-government efforts were initially rooted in the Civil Service Computerization Program, which aimed to enhance the efficiency and effectiveness of public administration through the strategic application of information and communication technologies (ICTs) (Gao, 2020). The initial groundwork led to the implementation of Singapore's first e-government Action Plan (2000–2003), which prioritized expanding the availability of electronic services. This was succeeded by a second Action Plan (2003–2006), aimed at improving user experience and service quality. Subsequently, the **iGov2010 Masterplan** (2006–2010) was introduced to develop a fully integrated and efficient digital government system, including the incorporation of mobile service platforms. Building on these advancements, the **eGov2015 Masterplan** (2010–2015) shifted the focus toward fostering collaboration and engagement among government, citizens, and the private sector, embracing a participatory model described as "Government with You" rather than a one-directional "Government to You" approach. As a result of these sustained efforts, Singapore has emerged as one of the top 10 countries globally in e-government development and is recognized as a leader in e-participation (UNDESA, 2018).

The United Kingdom ranks among the global frontrunners in e-government development and e-participation, consistently positioned within the top ten countries in these areas (refer to Tables 2 and 3). The UK's journey toward digital governance began in the 1990s, marked by the launch of the Government Information Services (GIS) portal, **open.gov.uk**,

in 1994. This early initiative was later succeeded by the **UK Online** portal, introduced as a beta version in 2000 to solicit public feedback prior to its official release in 2001. In 2004, the platform underwent a significant redesign and was relaunched under the name **Directgov**. Continued advancements led to the creation of the unified **GOV.UK** portal, first introduced in 2011 and officially launched in 2012, offering a comprehensive and centralized suite of digital public services (Brown et al., 2017). Since the year 2000, the United Kingdom has steadily advanced its e-government system, ultimately achieving a leading position on the global stage.

2.2. DEVELOPING COUNTRIES EXPERIENCES

As illustrated in Table 2, there are different circumstances to affect e-government acceptance in both developing and developed countries. According to (Dewa et al., 2014), they have recognized the degree to which people are ready to usage e-government system applications in Tanzania. Factors affecting people to adopt e-government identified and analyzed. The overall outcomes show that most people are still not willing to take e-government for the following reasons: Inadequate and limited access in particularly to ICT infrastructure, the resistance of people to digital technology, Lack of awareness of the e-government system services available, the choice and preference of people to use face-to-face service and delivery, Poor competences in ICT, and

Failure to confidence and trust information security measures to protect applications from e-government.

They conclude that more time and resources are needed so that productive people in the country are ready to adopt and use for e-government.

In Pakistani, the study conducted by (Ahmad et al., 2012) focuses on the user's point of view, which could provide a basis in the Pakistani and other countries for other e-government system research. The practical consequence of the study is that the development and implementation of e-government in Pakistan and other developing countries can be beneficial for government policy and decision-makers. It should, for example, implement policies and strategies that promote e-government awareness, security, privacy and user confidence. Pakistan's e-government is in the earliest stage, which helps to increase the preparation and execution of these aspects. Although this study shows impressive results, it is limited to a community of e-government adopters (Ahmad et al., 2012).

According to (Yadav & Tiwari, 2014), the Indian government has devised several initiatives to improve access to public applications; however, they are yet to realize the desired benefits due to certain reasons such as front-office and back-offices-related issues that the state continues to face. Front-office -related issues are issues bothering on high illiteracy levels, user-friendly interfaces unavailability, inadequate infrastructure and most importantly, lack of e-governance technology awareness. Back-office-related issues are bothered by technical, and human-resource-related issues within the administration. These issues comprise a lack of systems integration inside a department, lack of inclusion among public agencies, little knowledge of computers at different administrative levels and technological utilization without adequate re-engineering of the process.

3. METHODOLOGY

This review article adopts a qualitative, comparative methodology to examine the acceptance and usage of e-government in both developed and developing countries. The study synthesizes findings from a range of academic publications, government reports, and international surveys to explore the structural, cultural, and technological factors that influence e-government acceptance globally. The primary sources of data for this review include peer-reviewed journal articles, policy analyses, and global assessments such as the United Nations E-Government Surveys (UN, 2016; UNDESA, 2018), which offer comprehensive evaluations of e-government development and e-participation indices across 193 member states. Literature from both high-income (e.g., South Korea, United Kingdom, Singapore) and low- to middle-income nations (e.g., Pakistan, Tanzania, India) was examined to ensure a balanced perspective of experiences and challenges. A thematic analysis approach was employed to extract recurring patterns related to user acceptance, technological readiness, ICT infrastructure, and policy frameworks. These themes were then categorized into two groups—developed and developing contexts—to highlight comparative insights. Selection criteria for reviewed literature included relevance to the topic, recency, and academic reliability, with particular attention to works that explore user behavior, institutional challenges, and the socio-economic determinants of e-government acceptance (Ahmad et al., 2012; Chen et al., 2006; Dewa et al., 2014).

The review also integrates empirical findings from case studies and national e-government roadmaps, such as South Korea's master plan for National Informatization (Chung & Kim, 2019) and Singapore's multi-phase e-Government Action Plans (Gao, 2020), to demonstrate practical applications and lessons learned. By applying this qualitative synthesis methodology, the study aims to draw nuanced comparisons and develop a contextual understanding of the diverse trajectories in e-government implementation.

4. RESULT

Nations are classified into two major groups by the UN, which is developing and developed countries. The nations' classification is based on the status of economics like Gross Domestic Product "GDP", Gross National Product "GNP", per capita income, industrialization, and the living standard. Developed countries are countries that provide a secure, healthy and safe place to live, whereas developing countries are considered to lack the same facilities and services (UNCTAD, 2020).. Developing countries encounter unique and substantial obstacles in implementing e-government initiatives challenges that are typically less severe or absent in more technologically advanced nations. These include limited public access to digital technologies, inadequate awareness, underdeveloped infrastructure, gaps in technical education and digital literacy, and constrained financial and institutional resources. Despite these difficulties, e-government still holds considerable promise as a means to deliver essential public services and bridge critical development gaps (Eldresi et al., 2012). Table 1 summarizes some of these differences.

In several fields such as information technology infrastructure, policies and use, A notable disparity exists between developed and developing nations in various aspects of progress and capacity, as shown in Table 1. Developing countries often lack the expertise and resources required to develop effective e-government acceptance and strategies. In comparison to developed countries that face a little e-government system acceptance problem, there are several acceptance problems in developing countries as shown in Table 1. Also, in publications and studies, this gap still exists.

Various influencing factors have led to considerable disparities in the level of e-government development across nations worldwide, as highlighted by the United Nations E-Government Survey, which assesses progress in 193 countries (UNDESA, 2018).

The United Nations survey highlighted that a country's income level plays a role in shaping the development of its e-government systems, particularly through its impact on access to ICT infrastructure and the integration of digital literacy in education. Nevertheless, the report emphasized that national wealth alone does not ensure progress in e-government. Several low-income countries have made notable advancements in this area, while some high-income nations continue to fall behind. According to the survey, Denmark ranked first globally in e-government development, followed by Australia and the Republic of Korea. Table 2 below illustrates the leading countries at both global and regional levels.

By 2014, all 193 UN member states had established official national websites—a significant milestone in global digital governance. However, most countries still remained at basic or intermediate stages of e-government maturity. Advancing to higher levels of e-government development presents challenges, even for nations with strong ICT infrastructure and skilled human capital. This is largely due to the need for comprehensive data protection frameworks, secure and integrated payment systems, and effective inter-agency data exchange mechanisms. Additionally, factors such as user participation, well-structured e-government strategies, reliable technological infrastructure, and ICT-related education were identified as crucial to supporting further e-government progress (UN, 2016; UNDESA, 2018).

Table 1 Developed and Developing countries differences/ Source: (Chen et al., 2006)

Differences	Developed	Developing
History & Culture	• Government and economy developed early, immediately after independence. • The economy has been expanding at a steady pace, accompanied by continual improvements in productivity levels. • The nation enjoys a high quality of life, supported by an established tradition of democratic governance and a commitment to greater governmental transparency.	• The government is usually not specifically defined. • The economy is not increasing in productivity. • The low standard of living a relatively short history of democracy and less transparent government policy.
Technical Staff	• While the organization has an existing workforce, there is a need to enhance technical competencies and attract younger professionals to strengthen future capacity and innovation. • Possesses the capacity and financial means to engage external service providers through outsourcing. The existing team is capable of identifying and specifying the requirements necessary for development.	• Does not have staff or have a minimal in-house team. • Does not have local outsourcing abilities and rarely has the financial ability to outsource. • The current team may be unable to define the specific requirement
Infrastructure	• High exist infrastructure. • There is widespread Internet accessibility among both employees and the general population.	• Inadequate current infrastructure. • Internet accessibility remains limited among both employees and the general population.
Citizens	• Despite widespread internet access and strong computer literacy levels, challenges such as the digital divide and concerns over privacy persist. The population tends to have comparatively greater experience with democratic governance and engages more actively in the formulation of governmental policies.	• Low internet access and citizens are reluctant to trust online services, few citizens know how to operate computers. • Relatively less experienced in the democratic system and less active participation in the governmental policy-making process
Government Officers	• While there is an adequate level of computer literacy and allocation of resources, e-government is often not regarded as a top priority by many stakeholders.	• Low computer literacy and dedication of resources; many do not place e-government at a high priority due to lack of knowledge on the issue
State of economy	• The economy is experiencing steady growth accompanied by rising productivity, contributing to a high quality of life. • The country possesses a strong economy supported by diverse resources and invests substantially in advancing technological development.	• The economy is stagnant with little to no productivity growth, resulting in a low standard of living. • Limited economy state and relatively low spend on developing technologies in most countries.

Regarding e-participation, there are multiple avenues to enhance engagement, such as leveraging social media platforms and mobile technologies. Nonetheless, global challenges persist, including disparities in digital access, limited user adoption, and insufficient motivation for citizens to engage. The survey further identified the leading countries based on their e-participation rankings.

Table 2: E-Government Development Index - Top 10 Countries/ Source: (UNDESA, 2018)

Country	Index	Country	Index
Denmark	0.9150	Finland	0.8815
Australia	o.9053	Singapore	0.8812
Republic of Korea	0.9010	New Zealand	0.8806
United Kingdom	0.8999	France	0.8790
Sweden	0.8882	Japan	0.8783

The Republic of Korea ranked highest in e-participation, with Denmark and Finland following closely behind. Table 3 below illustrates the leading countries globally and within various regions in terms of e-participation.

Table 3: E–Participation Index- Top 10 Countries/ Source: (UNDESA, 2018)

Country	Index	Country	Index
Republic of Korea	1.0000	New Zealand	0.9831
Denmark	1.0000	Australia	0.9831
Finland	1.0000	Spain	0.9831
Netherlands	0.9888	United Kingdom	0.9831
Japan	0.9831	USA	0.9831

The international average for government websites usage by people is around 30%. This figure exceeds 51 per cent in Canada. Instead of interacting with or transacting with the government, the vast majority of Canadians visit public websites. The rate of e-government acceptance seems to have dropped below estimates worldwide, although some countries do better (Kumar et al., 2007). Many challenges face the successful e-government implementation applications in these developing countries. Those challenges vary in severity from state to another depending on the maturity of government servants, the country's economy and people. Some of these challenges are decentralization, developing staff skills, infrastructure development, leadership support and the digital divide (Abouchedid & Eid, 2006; Beukes et al., 2017).

The development and implementation of e-government were first reported in the advanced industrialized countries; hence, this concept may be inappropriate for most developing countries. IT is therefore expected that when introducing e-government in developing nations, more effort will be required than in the developed countries (Rabaa, 2018). Low system acceptance by users is one of the major obstacles to the development of e-government projects (Gupta et al., 2016). This gap between developed and developing countries can be attributed to several challenges ranging between different perspectives of users (Bhatt & Khanal, 2019; Mhina et al., 2018). The basis is on the fact that the implementation of technologies intended for developed countries like the USA in a developing country like Libya will definitely lead to failure.

5. CONCLUSION

This analysis has underscored the substantial differences in the adoption and utilization of e-government systems between developed and developing nations. Developed countries, such as South Korea, Singapore, and the United Kingdom, demonstrate advanced levels of e-government acceptance, driven by robust ICT infrastructure, strong institutional frameworks, high digital literacy, and proactive governance policies (Lee & Moon, 2020; UNDESA, 2018). Their experiences underscore the importance of long-term strategic planning, citizen-centered service design, and continuous technological innovation.

In contrast, developing countries continue to face multifaceted barriers that hinder the widespread implementation and use of e-government services. These include infrastructural limitations, low awareness, digital illiteracy, cultural resistance, and limited trust in digital platforms (Ahmad et al., 2012; Dewa et al., 2014; Yadav & Tiwari, 2014). Although advancements have been achieved in certain areas, the ongoing digital divide highlights the necessity for tailored approaches that extend beyond technological solutions to address social, cultural, and institutional factors (Eldresi et al., 2012; UNCTAD, 2020).

The findings suggest that successful e-government strategies must be inclusive, adaptive, and grounded in local realities. For developing nations, this involves not only investing in digital infrastructure but also promoting digital education, building institutional capacity, and ensuring user trust and engagement. For global policymakers and researchers, this review points to the need for more comparative and cross-contextual studies that inform sustainable digital governance. Ultimately, bridging the gap in e-government acceptance between developed and developing countries is essential for achieving equitable access to public services and enhancing democratic participation in the digital age.

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