

RESEARCH ARTICLE

Digital Divide and Uptake of Public E-Service in Nigeria: A Narrative Review

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Abstract

The motivation for this study is to identify demand-side factors militating against the uptake of public e-services due to the digital divide. This study is primarily concerned with demand-side factors that influence people's proclivity to utilize e-services. The paper depended on a narrative examination of relevant literature on the issues at stake and inferences drawn from it. Demand side factors found militating against the uptake of public e-services in Nigeria due digital divide are categorized into three, namely, individual factors (age, income, etc); social factors (trust, language, etc) and infrastructural-related factors (limited access to broadband, cost digital infrastructure). The study recommends inter alia capacity building and orientation programmes on the importance and relevance of digital literacy in order to increase participation to bridge the digital divide, as well as the development of online content and other features in Nigerian languages that are not already available on the Internet.

Keywords: Digital Divide; Public E-Service; Nigeria; Narrative Review

Introduction

The provision of electronic services by governments to their citizens and businesses is known as public e-service and is fundamental to digital agendas and policies around the world. (Malodia, 2021). The utilization of e-governance in the delivery of public services has come to stay across the globe. This was made possible by the fact that delivering public services through e-government improves SMART (Simple, Moral, Accountable, Responsible, and Transparent) governance. Put differently, it is a system of governance that is: user-friendly, upholds ethical value, is answerable to the people, reacts quickly and positively and make documents, processes and functions open in the public domain. However, the uptake of public services via e-governance has been hampered by some factors thereby widening the digital gap between and among people. Common critical factors that determine the usage of e-governance across segments of people are income, education, gender, geographical location, etc. In addition, Dar and Ahmad (2022) also remarked that in places with no or very limited infrastructure, the digital divide persists. This study attempts to investigate and identify from documentary analysis any of these factors that affect the utilization of e-governance most in Nigeria from the demand side. The foregoing is pertinent due to the rising concern regarding why some populations use certain e-government functions while others do not, given the availability of a wider range of e-government services. The study is also more important since digital inequality might impede and worsen e-Government programmes [if not effectively addressed] (Belanger & Carter, 2009).

Once more, it can be argued that the utilisation of advanced information technology (IT) in government has limited social impact when individuals encounter difficulties in accessing services or effectively engaging in political processes (Chima, 2022). Similarly, understanding the development and usage of IT in government without taking a demand perspective into consideration could lead to only partial interpretations of a complicated social reality (2009). Supporting this assertion, Reddick (2005) subscribes to the preceding idea that much of the existing e-Government literature examined digital divide from the supply-side perspective, and more attention to demand-side issues is required.

Importantly, the study becomes more distinctive on the ground that using the supply-side viewpoint, a rapidly growing body of empirical studies (Zhao et al., 2014, Das et al., 2017; Glyptis et al., 2020;) have evaluated the efficacy of e-government programmes. Conversely, not many studies have examined empirically the demand-side factors that affect citizens' utilization of the e-government system. In addition, the study is important since, according to Okwor (2009), Nigeria had the lowest accessibility and usage of mobile broadband from Nokia Siemens Networks among the fifty African countries. Hence, this study provides policymakers with a distinctive viewpoint on the demand-side variables that impede the adoption of public services in Nigeria, thereby enabling the formulation of effective public policy interventions to address this issue. Finally, empirical research on the demand side factors should be encouraged in future studies by employing quantitative methods.

To achieve the purpose of this study, the paper is divided into the following sections. Section one is the introduction, followed by section two which reviews the relevant literature related to the study. Section three dwells on the methodology of the study while section four presents the results and discussions and the last chapter is the conclusion.

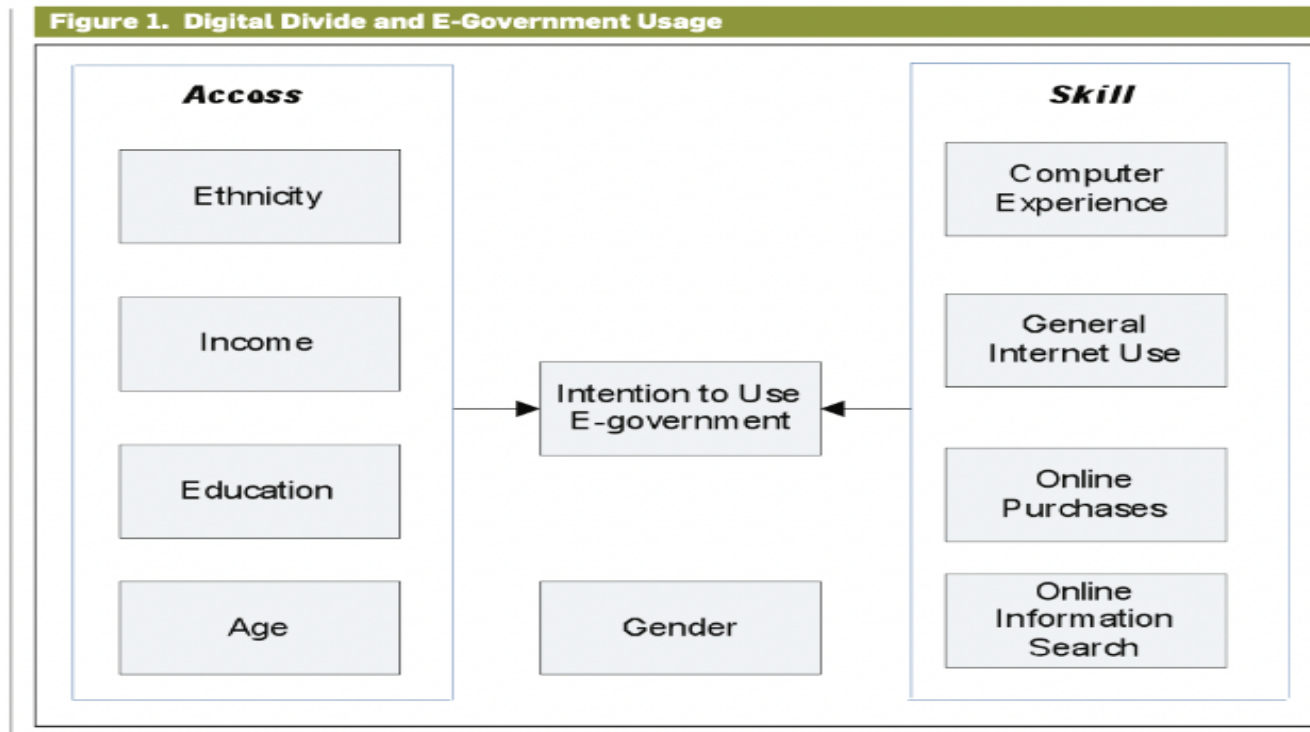
Literature Review

Digital Divide: Initially, disparities in computer access were referred to as the "digital divide." The phrase changed to include gaps in both computer and internet access as the internet quickly spread throughout society and established itself as a key form of computing (Van Deursen & Van Dijk, 2011, Afzal, 2023). ICT OECD (2001) made a similar claim that the phrase "digital divide" was used indiscriminately to refer to either the gap in people's access to ICTs or more specifically, the gap in their access to the internet when research on the issue initially got started. There have been attempts to completely explain the digital divide in terms of both access and use from the late 1990s to the present. Thus, digital divide can be viewed from two dimensions, that is, the gap in access and use. "Digital divide" refers to citizens having varying degrees of ICT access and the knowledge and experience needed to use it (Pérez-Morote, 2020). Similarly, Belanger & Carter (2009) assert that digital divide is the difference between those who have access to information and those who do not or between those who are computer savvy and those who are not. From this definition, it can be contended that two divides exist. These are the "divide in access and divide in skills". This is diagrammatically presented in figure 1 below.

A collection of literature (e.g Thomas, 2003; Mossberger et al, 2003; Hoffman, et al, 2006) recognised education, income, ethnicity and age as regularly important factors of access to technology. They concluded that a key component of the digital divide is the inability to access the Internet occasioned by the aforementioned factors. Additionally, Belanger & Carter, (2009) assert that a sizable portion of the populace lacks the skills to communicate online with the government. Technical competence and information literacy are two aspects of the divide in skills (Zhao et al, 2023). Technical competencies are "the skills required to operate hardware and software, such as typing, using a mouse, and instructing the computer to sort records in a specific manner," whereas information literacy is "the ability to recognize when information can solve a problem or fill a need and to effectively employ information resources" (Mossberger et al, 2003). According to Norris (2001), there are three distinct ways to think about the digital divide: globally (the difference in internet access between industrialized

and developing countries), socially (the information gap between the rich and poor), and democratically (the difference between those who do and do not use the variety of digital means to engage in public life).

Figure 1: Digital Divide and E-governance Usage



Source: Belanger & Carter (2009)

More recent conceptualizations according to Van Deursen & Van Dijk (2011) have shown that one of the elements that appear to be most essential is the differential possession of digital skills, whereas earlier studies on the digital divide mostly focused on a binary classification of physical access. Similarly, Tayo (2015) identified that the high cost of computer equipment, lack of ICT skills, and lack of familiarity with accessible search engines are only a few of the causes of the digital divide. Studies by scholars like Belanger and Carter (2008) and Tolbert and Mossberger (2006) have discovered a correlation between higher levels of e-government service utilization and better levels of trust in the government. To a large extent, these views are sacrosanct because the level of trust between the government and its citizens can impact public support for e-government. The takeaway from this section is that the digital gap exists between men and women, developed and developing countries, urban and rural populations, the older and younger generations, educated individuals and less educated, etc.

E-governance: There are several definitions of e-governance used in different studies, each of which varies depending on the needs of the research investigations (Adam and Chima, 2023). However, a common and popular understanding of e-governance suggests that it is "the use of information technology, particularly telecommunications, to enable and increase the efficiency with which government services and information are given to residents, employees, businesses and government agencies (Carter and Belanger, 2004)." Using information and communication technologies (ICTs) to support public services, government administration, democratic processes, and interactions among citizens, civil society, the commercial sector and the state is e-governance (Dawes, 2008). From the dimension of effective delivery of government services with transparency,

dependability and accountability, Malodia et al. (2021) describe e-governance as socially inclusive, hyper-integrated ICT platforms. A recurring theme in the descriptions above is that e-government entails the automation or computerization of conventional paper-based procedures, resulting in new leadership styles, business practices, ways to collect and distribute information, and new ways to communicate with individuals and communities.

Supporters of e-governance often guarantee the benefits of better governance, such as higher service quality, reduced costs, increased political engagement, or more efficient policies and programmes (Gartner, 2000; Garson, 2004, Chima and Adam, 2023). Twizeyimana, & Andersson (2019) aver that e-governance has external and relational values. External value refers to how e-governance enables governments to be more transparent to residents and companies by disseminating and providing access to a broader range of information gathered and generated by the government. Relational refers to how e-governance adoption may enable fundamental changes in people's interactions with the state, with ramifications for the democratic process and government institutions. Others claim the promise of more efficient and democratic public administration has not been fulfilled by the ideal of e-governance (Jaeger et al., 2005, Garson, 2004). It is also expected that e-governance services would improve government services while also enhancing citizen engagement (Xiong, 2016). Furthermore, e-government services give the public access to government information and services 24 hours a day, seven days a week, and have the potential to fundamentally restructure government operations (Malodia et al, 2021). Thus, the curiosity for this study is to unveil digital divide factors destabilizing the uptake of e-government services in Nigeria. This becomes pertinent in view of the fact that previous research has demonstrated that the modalities of digital inequality are context-specific, and it is crucial to be explicit about the context while researching the digital divide (Barzilai-Nahon, 2006).

E-Service: The term "e-service" stands for "electronic service,". It refers to a service that is provided electronically (Scupola, Henten & Nicolajsen, 2009). E-service as a concept has recently grown in popularity. There is, however, little general agreement with regard to its definition. Suffice it to say that there is a lack of a comprehensive definition and comprehension of e-services, as well as the notion and paradigm around them. However, electronic service, abbreviated as e-service, can be seen as a broad word encompassing services delivered using information and communication technology. The term "e-service" has numerous applications and can be found in a variety of areas. These include, E-business (or e-commerce) and E-government are the two most common utilizations for e-services (or non-commerce) (Kvasnicova, 2016). Sharing his thought on the concept of e-service, Scupola (2009) views it as Internet-based programmes that respond to service demands by dynamically integrating dispersed, specialized resources to enable complex (often real-time) transactions. Rowley (2006) defines e-service as "actions, initiatives, or performances whose transmission is facilitated by information technology" (including the Web, information kiosks and mobile devices). The foregoing definition suggests that through technology, like a website, consumers interact or contact the organisation when using an e-service. The fact that e-services are delivered electronically is shared by all of these definitions. In the context of e-governance, e-services are regularly used to transmit information in order to get permits, payments, register taxes, and other intangible items (Lindgren,2013). de Ruyter et al (2001) shares their thought by defining e-service as "an interactive, content-centered, Internet-based customer service, driven by the customer and connected with appropriate organizational customer support procedures and technologies with the purpose of enhancing the customer-service provider relationship." From the foregoing, it could be concluded that the existing definitions are based on a single central concept: the internet or another electronic network. However, without mincing words, Wikipedia Foundation cited in Kvasnicova (2016) asserts that e-services are moving away from the Internet. Telephone, fax, personal digital assistant, text messaging, image messages, Bluetooth, tracking systems, radio-frequency identifiers, biometrics identifiers, electronic ID cards, e-mail, online chat, and a variety of additional "offline" e-services are also

examples. What is unique about e-service is that people can transact with governmental bodies via ICT and transactions can be finished at the user's convenience without any queues, heavy traffic or administrative hassles. Theoretical Framework: Diffusion of Innovations Theory by Rogers (2003), provides a strong theoretical foundation for this study. Rogers defines innovation as "an idea, behaviour or object seen as novel by an individual or other unit of adoption." For Rogers, diffusion is "the process by which an innovation is disseminated through certain channels among members of a social system over time." In other words, Diffusion theory examines how ideas, behaviour and objects are spread among groups of people. Diffusion theory was rigorously tested for the first time in the 1940s and has since expanded, with research focused on the acceptance of a wide range of innovations, from hybrid seed corn to new health practices to Internet services. The idea of innovation diffusion proposes a general adoption model with five groups of adopters based on how soon they begin to use the invention (Rogers, 1995). Adopters are classified into five groups: innovators, early adopters, early majority, late majority, and laggards (Rogers, 1971). These are explored in greater depth below. Innovators have an almost obsessional need to experiment with new ideas. Large financial resources as well as the capacity to comprehend and apply complicated technological knowledge are frequently required for innovation. Some may perceive the innovator as bold or reckless, but they value risk-taking for the inherent danger it conveys. The innovators are also willing to accept the occasional failure when new ideas do not work. Early adopters are more likely than innovators to be absorbed into the local social system. Locals are seen as early adopters as opposed to cosmopolitan innovators. Early adopters appear to wield the most power in most social systems. They offer advice and information on a topic of interest to other adopters. Early adopters will be sought out by change agents in order to accelerate the dissemination process. Early adopters are frequently well-liked by their coworkers, and they have a track record of successfully and discreetly implementing new ideas. The theory postulates that early adopters of any technological innovation share three traits in common: they are young, educated and wealthy. These traits match those of users of e-governance services (Dimitrova and Chen, 2006).

In a social structure, the early majority will accept new concepts before the average member. Despite being in constant communication with their colleagues, they are seldom seen in positions of leadership. Since they serve as a bridge between very early adopters and late adopters, the early majority adopters are crucial to the dissemination process. They take longer to make decisions on new ideas than innovators and early adopters do because they take more time to consider them. Early majority adopters follow in the adoption of technology with excitement, but hardly ever take the lead. The late majority is a pessimistic group that embraces novel concepts similar to the ordinary social system member. They are hesitant to absorb new ideas and will hold off until nearly all of their social structure has. The late majority will only adopt an idea if the system rules clearly support it. They need to feel a lot of peer pressure before embracing an invention, even if they are persuaded of its advantages. Their adoption could be the result of mounting financial constraints and escalating social pressure. The laggards are obsessed with the past. Consequently, they make their decisions from the perspective of previous generations. Individual laggards tend to talk to traditionalists more often than innovators. In fact, Laggards are interested in maintaining the status quo, thus, are unwilling to embrace new ideas. Each adopter group has distinct traits. Laggards are so confined as a result of their lack of opinion leadership that they distance themselves from the other adopter types. Ideas that are already regarded as archaic in comparison to more recent ones are typically accepted as innovations by laggards. The late majority are sceptical, but, the laggards are more sceptical.

Applicability of the Theory to this Paper

This theory applies to the study since it suggests that Nigerian e-service users can be divided into four groups: early adopters, early majority, late majority and laggards. The most educated, young, and affluent members of

society live in Nigeria's urban centres, such as Lagos, Abuja, Port Harcourt, Kano, etc., where the early adopters are primarily concentrated. E-service usage is also significantly impacted by phone density by urban dwellers. With these characteristics, people in the urban centres more readily adopt any technological advances than their counterpart in rural areas who possesses the opposite characteristics. This creates a digital divide in Nigeria across and among different geographical areas, the haves and have-nots, and youths and elderly populations. The theory is also applicable to this study because the majority of e-service users in Nigeria are in the late majority and laggard categories. Most e-service users are hesitant to adopt e-services because they are normally wary of new ideas and will always wait until the bulk of individuals in their social circle have used the technology. People in this category in Nigeria naturally have a phobia to adopt new technology, so they frequently rely on friends or peers to check their email or browse the internet for them. The same conditions apply to Nigerian citizens who are in the laggard group. Due to their inadequate ICT literacy, they show unwillingness and maintain the status quo.

A Search for Demand-Side Militating Factors

In recent times, some public services are delivered online in Nigeria. Typical of these according to Edet Ani et al (2007), most of the standard examination bodies or organizations, including JAMB, WAEC, NECO, etc., now conduct their educational operations online, and this trend has become more pronounced over the past two years. As a result, students can now register for these numerous assessments online at any time and from any location without having to make the perilous and expensive physical commute to school. Similarly, other Nigerian universities are already launching websites that let potential students converse online while looking for admissions and other important information. Despite this, Nigeria has significant digital gaps. This assertion has been substantiated by Adeleke (2021), when he posited that there are obvious clusters of high numbers for Internet usage in Lagos, Oyo, Ogun, Kaduna, Kano, and Abuja, indicating differences in Internet usage amongst the major areas of Nigeria. In contrast, Adeleke (2021), submitted that there were few Internet users in Ekiti, Ebonyi, and Bayelsa states. This is presented numerically below:

“In both the south and the north, particularly in Oyo (5,824,283), Ogun (6,628,217), and Lagos (15,707,534), and Kaduna (4,993,597), Kano (5,874,504), and the Federal Capital Territory (5,250,508), there are observable clusters of high figures for Internet usage. Additional examination of the map reveals that, while the south had the highest percentage of Internet users (62,279,747) nationwide, there were instances of low Internet user numbers in Ebonyi (938,295), Ekiti (1,103,884), and Bayelsa (856,374) (Adeleke, 2021:9).

This shows that the country's Internet usage was sharply divided along a number of economic and social lines, as well as between its urban and rural regions. The size of the market, employment, wealth, availability of energy, urbanization, gender (female), age (60 and older), and phone density all had a major impact on internet usage. However, an empirical study conducted by Edet Ani et al (2007) ‘Bridging the digital divide in Nigeria: A study of internet use in Calabar Metropolis, Nigeria’ reports that the two biggest barriers to internet use are a lack of financial resources and lack of ICT skills. For instance, the report submits that users of public services employ the assistance of operators of cyber cafes or any other intermediaries (such as friends or peers) to browse the internet or check their email. In a similar vein, Titilope (2018) opines that language and cultural limitations also provide a significant hurdle to reducing the digital divide among Nigeria's rural population due to a lack of locally generated content online. It is challenging for Nigerians because their first language is not English to access and use such information because the majority of content on the internet and other ICT tools is written in another language. As a result, it is difficult for people to use and apply the knowledge in their daily lives because it is not indigenous. In addition, Titilope (2018) submitted that rural people, especially, have misconceptions about how technology is used; they believe it is designed for the elitist group rather than for people like them who are uneducated, archaic, and uninitiated in its use. Eneh (2010) highlighted the disparity in Internet usage between men and women in

Enugu state, Nigeria. It was pointed out in her report that men use the Internet more regularly than women, according to the study. This was attributed to women's low literacy rates. In a similar vein, Anunobi and Mbagwu (2009) evaluated the gender gap in Internet usage in the Nigerian state of Imo and discovered that female use was nearly on par with male use. However, they emphasized that technological discrimination against women, historically enforced home pressure, and various cultural hurdles were the causes of their limited Internet usage.

Table1: Access to High-Quality Internet Service by Geopolitical Zones in Nigeria

Geopolitical Zones	Internet Users	Year	Quarter
Eastern Region	13.7 million	2021	Fourth Quarter
Southwest	41.7 million	2021	Fourth Quarter
North Central	26.6 million	2021	Fourth Quarter
North West	25.4 million	2021	Fourth Quarter
South-South	20.8 million	2021	Fourth Quarter
North East	13.8 million	2021	Fourth Quarter

Source: Author’s Construct, 2022

After the COVID-19 pandemic, when educational systems switched to new learning techniques utilizing the internet, children in rural and underdeveloped areas of Nigeria were mostly excluded from this digital change (Amorighoye, 2020). In this regard, Obiakor & Adeniran (2020) reported that the bulk of people in Nigeria who have access to the internet during the COVID-19 pandemic come from urban homes with higher socioeconomic status and the means to pay for private school tuition, providing their kids with an educational advantage over those in public schools. Adaramola (2022) attributed the low uptake of e-service in Nigeria to inadequate broadband infrastructure. Due to insufficient infrastructure, nearly 30 million Nigerians are affected who are not online. According to the NCC report, Nigeria's fiber optic broadband networks only account for less than 25% of all the country's installed fiber cables, even while broadband penetration is still only at 45% (Adaramola, 2022). Similarly, an in-depth study conducted by the Alliance for Affordable Internet (A4AI) indicates that only 12.1% of Nigeria's population now has access to high-quality Internet services (Meaningful Connectivity) (Adepetun, 2022). According to A4AI reported in Adepetun (2022), there is an 81% connectivity gap in Nigeria, with only 6.6% of the rural population and 16.4% of the urban population having adequate Internet service. In terms of Internet access using the aforementioned report, rural communities lag behind their metropolitan counterparts. This shows that people in urban regions are twice as likely as those in rural areas to be connected to the Internet, and the urban-rural Internet use difference will continue to widen. This situation is partly linked to the fact that just 68.7% of Nigerians own a computer (Adepetun, 2022). The magnitude of digital disparity in Nigeria is depicted in table 1.

According to the above table, South Eastern Nigeria has the fewest internet users in Nigeria in the fourth quarter of 2021. In the quarter under review, the South West region had the most internet users, followed by the North Central, North West, and South-South. The unstable North East comes in second to the South Eastern region.

Additionally, there is a north-south difference within the nation, with southern regions (including large cities like Lagos) faring better than their northern counterparts in terms of household mobile phone coverage (Mba, 2022). Lack of infrastructure, poor broadband access, population size and inadequate finance were demand-side factors found to be responsible for the low uptake of e-service users.

Country-level rural-urban gap in mobile internet use (2018-2020)

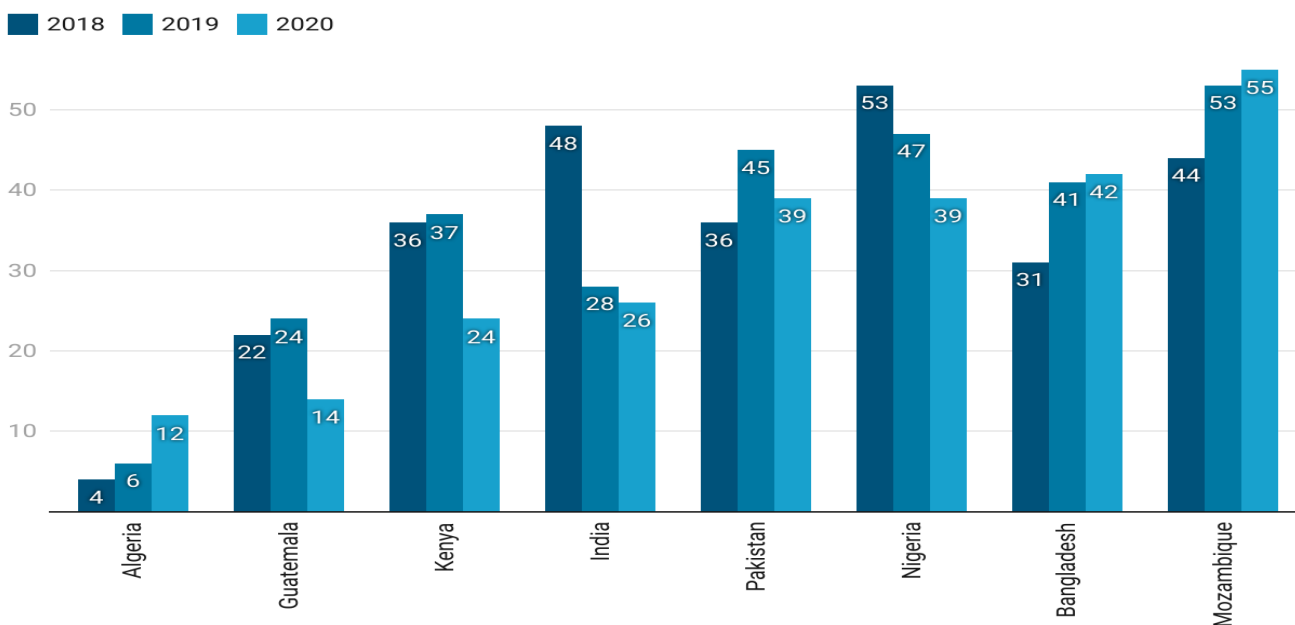


Chart: Dataphyte • Source: Global System for Mobile Communications (GSMA) • Created with Datawrapper

Figure 2: Country-level rural urban gap in mobile internet use (2018-2020)

Chart: Global System for Mobile Communications (GSMA). Created with Data wrapper

The graph above further shows that there is still a sizable rural-urban difference even though more people are accessing mobile internet in rural areas. A Global System for Mobile Communications (GSMA) survey reported in Mba (2022), found that across rural and urban Nigeria, the proportion of people using mobile internet dropped from 53% in 2018 to 39% in 2020 (see the graph below). However, compared to 40% in urban areas, 61% of Nigerians live in rural areas without access to the internet, (Mba, 2022). The graph demonstrates further that of the low and middle-income countries (LMICs) examined, Nigeria has one of the largest rural-urban disparities in mobile internet use. Countries like Kenya and India as shown in the graph below have a smaller rural-urban split than Nigeria does. In summary, the finding from the study shows that the digital gap in Nigeria is caused by a lack of financial resources and ICT skills, a language barrier to accessing online information, cultural barriers, and a low literacy rate. These have been exhaustively addressed in the paper.

Methodology

This study aimed to provide a comprehensive overview of the existing literature on demand-side factors that account for the digital divide and explain the poor use of public e-services in Nigeria. A review of the literature was conducted to analyse and synthesize the key findings, methodologies, and theoretical frameworks used in previous studies. The review of the literature approach was chosen because it allows for a systematic and rigorous analysis of the available literature on demand-side factors that accounts for the digital divide and explain the poor use of public e-services in Nigeria. The search terms included "digital divide," "public e-service," "uptake," "factors," "barriers," "challenges," "access," "use," "internet," and "technology." The search was limited to studies published between 2010 and 2022 in English. A total of 22 studies were selected for inclusion in the review after the inclusion and exclusion criteria were applied to select the most relevant and high-quality studies for review. The key findings, methodologies, and theoretical frameworks used in previous studies were identified and analysed for patterns, similarities, and differences. The results of the review of literature were synthesized and presented in a narrative format, which according to Snyder (2019) should include a critical evaluation of the strengths and limitations of the previous studies, as well as the implications for future research were all considered. The validity and reliability of the literature review were ensured by following a rigorous and transparent data collection and analysis process. The inclusion and exclusion criteria were applied consistently and objectively to minimize bias in line with the view of (Salkind, 2010), and the search strategy was documented and reported in detail. Multiple reviewers conducted the data reviews to ensure inter-rater reliability, and any disagreements were resolved through discussion and consensus. This review of the literature did not involve human subjects, and therefore, ethical approval was not required. However, all studies included in the review were cited and referenced appropriately to acknowledge the original authors and sources of the data.

Results and Discussions

The systematic review identified several factors that militate against the uptake of public e-services due to the digital divide. These factors can be categorized into three main groups: individual, social, and infrastructure-related factors.

Individual Factors: Individual factors include digital literacy, age, income, education, and computer and internet access (Haleem et al, 2022). The studies showed that individuals with low digital literacy are less likely to use public e-services. Also, older individuals, those with lower income and education, and those with limited computer and internet access are less likely to use public e-services. This supports the finding by Hill et al. (2015) that older individuals lack abilities to participate in increasingly online activities, creating a digital gap in society. Also, the findings of a study involving a sample of 65 to 70-year-old people demonstrate that higher education is linked to greater ICT use (Augner, 2022). Younger populations use available electronic government services more regularly, according to other studies, such as those by Goldfinch et al. (2009) and Zheng & Schachter (2017). Similarly, the finding is consistent with the work of Mubarak et al (2020) which claimed that income and education are factors in ICT diffusion and that poverty is a major factor in the global digital gap.

Social Factors: Social factors include trust, culture, language, and social support. Studies showed that a lack of trust in public institutions and services, cultural and linguistic barriers, and limited social support can hinder the uptake of public e-services (Kelly et al, 2023). Utilizing panel data collected from 27 European nations for the years 2010 to 2018, Pérez-Morote et al (2020) reveal that the use of e-government services by citizens is influenced by their level of trust in their governments and the digital gap related to their level of income and education. In the

same vein, studies by authors such as Tolbert and Mossberger (2006) and Belanger and Carter (2008), state that there is a correlation between increased use of e-government services and higher levels of public trust.

Infrastructure-Related Factors: these include the availability, affordability, and quality of digital infrastructure (Oloyede et al, 2023). Studies showed that poor digital infrastructure, limited access to broadband, and the cost of digital infrastructure can impact the uptake of public e-services. In a survey employing the double-bounded dichotomous choice model to evaluate people's WTP, with two study hypotheses tested and verified through regression analysis, Chen et al (2023) discovered that consumers in rural areas are substantially less ready to pay for broadband than those in metropolitan areas. Similarly, Peter (2021) found that broadband access is constrained by socioeconomic considerations, contributing to the digital divide – the gap between those who have ready access to computers and the internet and those who do not.

Conclusion

Having examined the archival materials on the digital divide factors militating the uptake of public e-service in Nigeria, the paper concludes that few studies have explored demand-side factors. Incidentally, these factors aggravate digital divide in Nigeria and by extension limit the uptake of public e-service. The study, therefore, suggests that the Nigerian government should bridge the digital divide in order to achieve more equitable and sustainable socioeconomic development throughout Nigeria's social strata. This is germane on the premise that a country's potential to attract investment, grow existing industries and promote job creation is significantly influenced by its people's abilities, which adoption of digital economy has proven in other climes.

Consequently, the ever-widening digital divide between the North and South, rural and urban areas, organizations and within organizations must be bridged. In doing so, the study proposes the need for governments to invest in improving digital infrastructure, promoting digital literacy, and providing social support to individuals who may face barriers to using public e-services. Additionally, governments should work to build trust and confidence in public e-services and address cultural and linguistic barriers to their uptake.

The review further adds to the current body of literature, as it provides researchers an avenue to identify the key factors that have been found to influence e-service adoption, most especially from an emerging economy context, which is not so common in literature. Further, it highlights fundamental areas where further research is needed in developing and understanding the digital divide and public e-service. This can help to inform the design and implementation of e-services in ways that are more responsive to the needs and preferences of diverse user groups and can help to promote greater uptake of these services among populations that may currently be underserved or excluded.

In addition, by exploring the complex interplay of factors that affect e-service adoption, researchers can contribute to a more nuanced understanding of the digital divide and its impacts. This can help to challenge simplistic assumptions about the causes and effects of the digital divide and can lead to more effective policies and interventions for reducing inequalities in access to digital technologies and services. As a policy contribution, this study provides policymakers and service providers better understand the barriers and facilitators to e-service adoption, and to develop strategies for promoting greater equity and access to these services. Overall, the originality and contribution to the knowledge of research on the factors affecting the uptake of public e-services in the context of the digital divide lies in its potential to inform policy and practice in ways that promote greater equity and access for all citizens, and in its ability to deepen our understanding of the complex social and economic factors that shape the digital divide.

One possible direction for future research is to investigate the role of digital literacy and skills in the uptake of public e-services. Also, the emphasis could be to investigate the role of trust and confidence in the uptake of public

e-services. This could involve exploring how trust and confidence in e-services are formed, how they are affected by factors such as privacy and security concerns, and how they can be strengthened. Future research could focus on identifying barriers to accessibility and usability and exploring ways to improve the design and accessibility of e-services for users with different needs and abilities. Future research could explore how these factors interact with digital divide factors to affect the use of e-services, and identify strategies for addressing the socio-economic factors that may be hindering the uptake of e-services. Finally, future research could investigate how cultural and social factors influence the adoption and use of e-services, and identify ways to address these factors in order to promote greater uptake of e-services among different groups of users.

The major limitation of this study is that it did not employ quantitative methods to analyse data.

Declaration

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Data availability: From the author

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