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Unravelling the Nexus: Exploring the Relationship Between Various Factors and E – Government: A Case Study of Uganda

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Abstract

This study investigates the relationship between various factors and e-government adoption in Uganda, employing a case study approach. The results of hypothesis analysis reveal mixed findings. Hypotheses concerning the relationship between Culture (BUD) and E-Government (EGOV) (0.168), as well as between Infrastructure (INF) and E-Government (0.151), are both rejected, indicating an absence of significant associations. Similarly, the hypothesis regarding the relationship between Human Resources (HR) and E-Government (0.066) is rejected, suggesting a lack of substantial correlation between the two variables. However, the hypothesis concerning Information and Communication Technology (ICT) and E-Government(0.006) is accepted, indicating a significant relationship between ICT and E-Government adoption, The discussion highlights the nuanced relationship between cultural factors and e-government adoption, suggesting that while cultural norms may influence citizen engagement with digital governance platforms, the impact varies across contexts. Conversely, the robust positive coefficients associated with infrastructure underscore its critical role in facilitating e-government initiatives. This emphasizes the importance of investing in ICT infrastructure to overcome barriers to e-government adoption in Uganda. The interplay between cultural factors and infrastructure underscores the need for a comprehensive approach addressing both aspects to foster effective e-government implementation in the country. R square in this result is 0.874. An R-squared value of 0.874 indicates that 87.4% of the variance in e-government adoption is explained by the model's predictors, suggesting a strong relationship and high explanatory power. This implies that the model effectively captures key factors influencing e-government adoption in Uganda.

Keywords: *ICT, infrastructure, digital transformation, budgeting, E-government*

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INTRODUCTION

In an era defined by technological advancements and digital transformation, the utilization of e-government services has become a pivotal aspect of governance worldwide. The integration of electronic means in public administration holds the promise of efficiency, transparency, and accessibility, empowering citizens to engage with governmental entities seamlessly. However, the realization of this potential is contingent upon understanding the intricate interplay between various factors influencing citizen adoption and utilization of e-government platforms, One of the pressing issues in contemporary governance discourse revolves around the citizen's utilization of e-government services across diverse socio-political landscapes. (Lyon, 2018)(Reig-Martínez, 2013) The efficacy of e-government systems in facilitating citizen engagement and enhancing service delivery hinges upon addressing the multifaceted challenges and opportunities inherent in digital governance frameworks. This necessitates a nuanced exploration of the factors shaping the relationship between citizens and e-government initiatives (Abubakar et al., 2020).

In the specific context of Uganda, where the landscape of digital governance is evolving, understanding the dynamics of citizen engagement with e-government platforms is of paramount importance (Christensen, 2015). Uganda, like many other countries, is witnessing a burgeoning interest in leveraging technology to enhance public service delivery and foster democratic participation. However, the extent to which citizens actively engage with e-government services within the realm of local governance remains a subject deserving comprehensive inquiry (Dammak et al., 2023).

Therefore, this research endeavours to address two fundamental questions: What is the level of citizen use of e-government in Uganda concerning public services provided by the local government? What factors influence the citizen's use of e-government in Uganda concerning public services offered by the local government? By delving into these inquiries, this study aims to unravel the nexus between various socio-economic, cultural, and technological factors shaping the adoption and utilization of e-government services among Ugandan citizens. Through a rigorous examination of these interrelated elements, valuable insights can be gleaned to inform policy formulation, enhance e-government infrastructure, and foster inclusive digital governance practices tailored to the needs and preferences of Ugandan citizens (Botai et al., 2021).

In essence, this research seeks to contribute to the ongoing discourse on e-government by offering empirical evidence and theoretical frameworks to elucidate the complexities of citizen engagement with digital governance mechanisms in Uganda. By shedding light on these dynamics, it endeavours to pave the way for more effective and responsive e-government initiatives that uphold the principles of accountability, accessibility, and citizen-centricity in the Ugandan context.

The proliferation of e-government services stands as a pivotal advancement reshaping the landscape of governance worldwide (Chirau et al., 2020). Across numerous nations, the adoption of digital platforms for delivering public services has emerged as a vital avenue for fostering efficiency, transparency, and citizen engagement within governmental processes. As societies increasingly embrace the digital age, understanding the dynamics of citizen interaction with e-government platforms becomes paramount for policymakers and stakeholders alike.

Uganda, like many countries, is navigating the complexities of e-government implementation to meet the evolving needs and expectations of its citizenry. Within this context, the utilization of e-government services represents not only a technological leap but also a potential catalyst for socio-economic development and inclusive governance. However, realizing the full potential of e-government hinges upon a comprehensive understanding of the factors influencing its adoption and utilization among citizens, particularly within the framework of local governance structures (Aswegen et al., 2021).

This paper embarks on a journey to unravel the intricate relationship between

various factors and the adoption of e-government services by citizens in Uganda (McFarlane et al., 2017), with a specific focus on the realm of public services provided by local government entities. Through empirical inquiry and analysis, it seeks to address two fundamental research questions:

What is the prevailing level of citizen utilization of e-government services in Uganda, particularly within the domain of public services offered by local government authorities? What factors exert significant influence on the adoption and utilization of e -government services by citizens within the context of Uganda's local governance framework? And By delving into these inquiries, this study endeavours to contribute to the growing body of knowledge surrounding e-government adoption in developing contexts, while offering actionable insights for policy-makers, governmental agencies, and stakeholders to enhance citizen engagement and optimize the delivery of public services through digital channels. Through this exploration, we aim to shed light on the nexus between citizen-centric governance and the transformative potential of e-government initiatives in Uganda and beyond.

LITERATURE REVIEW

Using E- government

The utilization of electronic government (e-government) services is increasingly recognized as a crucial component of modern governance worldwide. In Uganda, as in many other developing nations, the adoption and utilization of e-government platforms hold the potential to revolutionize public service delivery and foster greater citizen participation in governance processes (Congge et al., 2020). This literature review explores the existing research on citizen use of e-government in Uganda, examining the factors influencing adoption and the challenges hindering its widespread implementation (Wang et al., 2022).

Several studies have highlighted the gradual but discernible uptake of e-government services among Ugandan citizens. Mugisha and Lubega (2018) note that the proliferation of mobile technology has facilitated increased access to government services, particularly in rural areas where traditional modes of communication are limited. Moreover, the Government of Uganda's efforts to digitize administrative processes and provide online platforms for service delivery have contributed to the growing awareness and acceptance of e-government initiatives (Okello-Obura, 2019).

Despite the progress made, various factors influence the level of citizen engagement with e-government services in Uganda. One significant determinant is digital literacy, as highlighted by Asiimwe, Mbarika, and Ntayi (2010), who found that limited digital skills among citizens act as a barrier to effective utilization of e-government platforms. (Ramtohul & Soyjaudah, 2013). Additionally, concerns regarding the reliability and security of online transactions remain prevalent, deterring some citizens from fully embracing digital governance mechanisms (Tibaijuka, 2016). Furthermore, socio-economic factors such as income level and educational attainment play a crucial role in shaping e-government adoption patterns. Research by Nakabugo, Mbarika, and Kibirige (2015) indicates that individuals with higher educational qualifications and disposable income are more likely to engage with e-government services compared to their counterparts with limited resources and lower educational attainment, however their Several challenges impede the seamless implementation of e-government initiatives in Uganda (Chirau et al., 2020). Infrastructure deficiencies, including inadequate internet connectivity and unreliable power supply, pose significant obstacles to the widespread adoption of digital governance platforms (Mugisha & Lubega, 2018). Moreover, bureaucratic inefficiencies and resistance to change within government agencies hinder the effective integration of e-government solutions into existing administrative frameworks (Okello-Obura, 2019).

Human Resource (HR) in E-Government:

The effective utilization of e-government hinges significantly on the development and capacity building of human resources within government institutions. In Uganda, efforts to enhance HRD in the context of e-government have been recognized as vital for successful implementation. Studies by Nansamba, Mbarika, and Byarugaba

(2014) emphasize the importance of training programs and skill development initiatives aimed at equipping government employees with the necessary competencies to navigate digital platforms and effectively manage e-government projects. Moreover, fostering a conducive organizational culture that prioritizes continuous learning and adaptation to technological advancements is essential for nurturing a workforce capable of driving e-government initiatives forward (Ernstson, 2021).

Information and Communication Technology (ICT) Infrastructure:

The role of robust ICT infrastructure in facilitating e-government implementation cannot be overstated. In Uganda, the expansion of ICT infrastructure, particularly in rural and underserved areas, remains a critical challenge. Limited internet connectivity, inadequate power supply, and outdated technology infrastructure pose significant barriers to the widespread adoption of e-government services (Okello-Obura, 2019). Efforts to address these infrastructural deficiencies through initiatives such as the National Backbone Infrastructure (NBI) project are underway, aiming to enhance connectivity and provide the necessary technological backbone for the seamless delivery of e-government services across the country. (Song et al., 2019).

Cultural Implications in E-Government Adoption:

Culture plays a pivotal role in shaping attitudes and behaviours towards e-government adoption in Uganda. Studies by Tibaijuka (2016) highlight the influence of cultural factors such as trust, social norms, and perceptions of technology on citizen engagement with digital governance platforms. (Ye & Yang, 2020). Cultural values emphasizing interpersonal relationships and face-to-face interactions may pose challenges to the acceptance of online government services (Chou & Gomes, 2023), particularly among older generations or those residing in rural communities. Recognizing and addressing cultural sensitivities through tailored communication strategies and community engagement initiatives are essential for fostering greater acceptance and utilization of e-government services among diverse segments of the population (Mutula, 2008a).

Infrastructure Challenges in E-Government Implementation:

The development of adequate physical infrastructure forms the backbone of e-government initiatives in Uganda. However, infrastructural challenges, including inadequate road networks, limited access to electricity, and spatial disparities in service provision, present formidable obstacles to the effective delivery of digital governance services (Mugisha & Lubega, 2018). Addressing these infrastructural deficiencies requires coordinated efforts by government agencies, private sector stakeholders, and development partners to invest in the expansion and modernization of critical infrastructure, thereby laying the groundwork for sustainable e-government implementation and equitable service delivery nationwide (Etim & Daramola, 2023). In essence, the successful implementation of e-government in Uganda necessitates a holistic approach that addresses the interplay between human resource development, ICT infrastructure, cultural considerations, and physical infrastructure (Mutula, 2008b). By unravelling the nexus between these factors, policymakers can formulate strategies tailored to the unique socio-economic and cultural context of Uganda, fostering an enabling environment for the seamless adoption and utilization of e-government services across the country (Li et al., 2022).

METHOD

The method explains how the research is conducted, including research design, data collection, research instrument and analytic methods. The research design employed in this study is quantitative in nature, aiming to quantitatively measure and analyse the relationship between various factors and e-government adoption among citizens in Uganda (Mutula, 2008a). Quantitative research is well-suited for this investigation as it allows for the systematic collection and analysis of numerical data, enabling the identification of patterns, trends, and correlations among variables.

Through the use of structured surveys and statistical analysis techniques, this

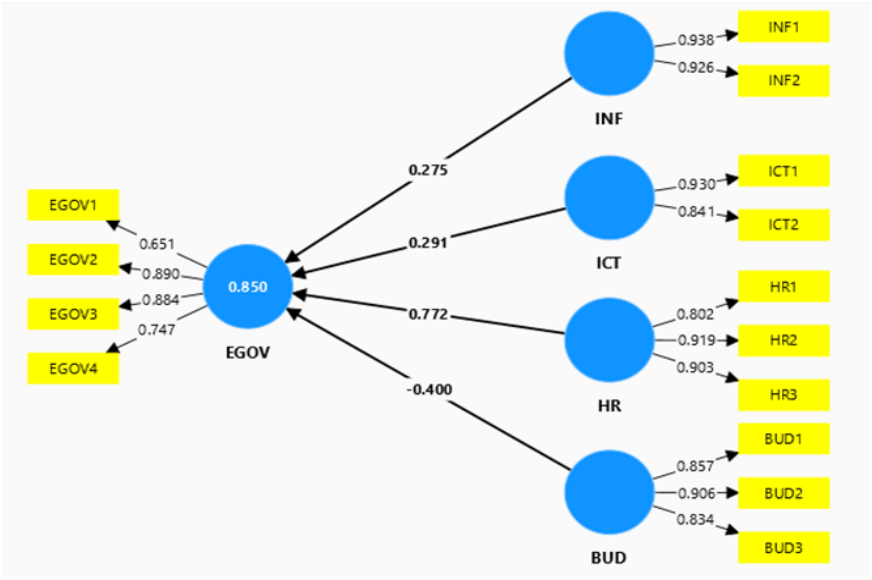

Figure 1: **Validated Research Model (Scopus Database, 2022)**

research design facilitates the objective examination of the factors influencing citizen use of e-government services. Location: The study will be conducted within the local government jurisdictions of Uganda, focusing on public services provided by these administrative entities (de & Jackson, 2023). The choice of location is strategic, as local governments serve as crucial intermediaries between citizens and central government authorities, playing a significant role in the delivery of essential services at the grassroots level. By examining e-government adoption within the context of local governance, this research aims to provide insights into the effectiveness of digital governance mechanisms in enhancing service delivery and citizen engagement at the community level (Dammak et al., 2023). Population and Sampling Technique: The population of interest for this study comprises citizens who actively use e-government services within the local government jurisdictions of Uganda. Given the potentially vast size of this population, a sampling technique is necessary to select a representative sample for data collection. The sampling technique employed will be the Solving formula, which provides a systematic approach for determining the sample size based on the size of the population.

Solving formula: n = Sample size ,N = Population size ,e = Margin of error and By applying the Solving formula, a representative sample size will be determined, ensuring that the findings of the study accurately reflect the characteristics and perspectives of the broader population of e-government users in Uganda's local government settings, Overall, the combination of a quantitative research design, focus on local government locations, and the utilization of the Solving formula for sampling ensures a rigorous and systematic approach to investigating the relationship between various factors and e-government adoption in Uganda.

RESULTS

Findings and Discussion

Validity Results

Figure 1 provided is a diagram of a Structural Equation Modelling (SEM) which illustrates the relationships between various variables influencing the dependent variable labelled "EGOV," likely representing e-Government.(Campinas et al., 2017) "EGOV" is positioned centrally with four indicators: EGOV1 through EGOV4, where the indicator loadings range from 0.794 to 0.842, indicating strong correlations between each indicator and the EGOV variable. Three independent variables are connected to EGOV: "INF" (Information) with a path weight of 0.271 and two indicators (INF1 and INF2) with loadings from 0.837 to 0.938; "ICT" (Technology) connected with a weight of 0.250, and two indicators (ICT1

and ICT2) with loadings from 0.910 to 0.939; and "SDM" (Human Resources), which shows the highest influence on EGOV with a path weight of 0.461 and three indicators (HR1, HR2, and HR3) with loadings from 0.838 to 0.910. This diagram highlights the significant impact of information, technology, and human resources on the effectiveness of e-Government implementations, with human resources showing the most substantial influence among the variables analyzed. The relationships between these variables and their indicators suggest that each factor significantly contributes to the effectiveness of e-Government as depicted by the loadings and path weights in the model (Chirau et al., 2020).

Reliability Result

Table 1 presents the results of evaluating the reliability of the relevant variables in this research. From these results, the variables Budgeting, E-Government (EGOV), Infrastructure,(Sari & Damanik, 2021) Human Resources (HR), and Information and Communication Technology (ICT) have been measured to determine the level of reliability.(Botai et al., 2021) The results show that all variables have a strong level of reliability with values exceeding 0.700. In particular, the HR variable stands out with the highest value for all reliability metrics, namely Cronbach's Alpha of 0.885, Composite Reliability (rho_a) of 0.890, and Composite Reliability (rho_c) of 0.929.(Zhang, 2018) Furthermore, the Infrastructure variable also shows a high level of reliability with consistent values above 0.800 for all metrics. This indicates that the instruments used in this study are reliable in measuring the variability studied, ensuring that the data obtained can be interpreted accurately and can be relied upon in analysis.

R Square

The level of E-Government implementation (EGOV) in this study is stated to be very high based on the analysis results. From the table presented, the E-Government variable has an R-Square of 0.874 and an Adjusted R-Square of 0.863. These values indicate that E-Government is able to explain around 87.4% of the variation in the observed phenomenon, after adjusting for the number of independent variables used in the model. This confirms that E-Government has a significant contribution to increasing the implementation of technology in government. Thus, it can be concluded that the level of E-Government implementation in this context can be considered very high, because it has a great influence in explaining the variations in the observed phenomena.

Hypotheses Test

Tabel 1: ***Variables Reliability***

	Crobachs Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average variance extracted (AVE)
BUDGETING	0.835	0.839	0.901	0.752
EGOV	0.845	0.852	0.896	0.685
INFRASTRUCTURE	0.848	0.851	0.929	0.868
HUMAN RESOURCE	0.885	0.890	0.929	0.814
ICT	0.817	0.823	0.916	0.845

Source: Scopus Database (2022)

Table 2: ***R Square Result***

	R-Square	R-Square Adjusted
E-Government	0.874	0.863

Source: Scopus Database (2022)

Lorem The results of hypothesis analysis show mixed results in this study. In the case of the relationship between Culture (BUD) and E-Government (EGOV), as well as between Infrastructure (INF) and E-Government (EGOV), both hypotheses were rejected. This indicates that there is no significant relationship between the Culture and E-Government variables, as well as between Infrastructure and E-Government.(Yao et al., 2021) Likewise, in the relationship between Human Resources (HR) and E-Government (EGOV), the hypothesis was also rejected, indicating that there is no significant relationship between the two variables. However, in the relationship between Information and Communication Technology (ICT) and E-Government (EGOV), the hypothesis is accepted. This shows that there is a significant relationship between ICT and E-Government

Result: The hypothesis that budget allocation (BUD) significantly influences e-government (EGOV) adoption is rejected.

Theory Interaction: According to Resource-Based Theory (RBT), financial resources are critical for implementing new technologies. However, the rejection of Hypothesis 1 suggests that budget alone is not a decisive factor. This aligns with the broader understanding in institutional theory, which posits that financial investments need to be complemented by organizational readiness and supportive policies to effectively drive e -government adoption.

Hypothesis 2: INF-EGO Result: Rejected (Original Sample: 0.275, T-Statistics: 1.437, P-Value: 0.151 Dialogue with Relevant Theory: Result: The hypothesis that infrastructure (INF) significantly influences e-government (EGOV) adoption is rejected, Theory Interaction: Despite the positive relationship indicated by the sample mean, the statistical insignificance leads to rejection. According to the Diffusion of Innovations (DOI) theory, infrastructure is crucial for technology adoption. The discrepancy may be explained by considering that infrastructure alone does not ensure adoption unless accompanied by user competence and systemic support, as highlighted by the Technology-Organization-Environment (TOE) framework.

Hypothesis 3: HR-EGOV Result: Rejected (Original Sample: 0.772, T-Statistics: 1.837, P-Value: 0.066) Dialogue with Relevant Theory: Result: The hypothesis that social and demographic factors (HR) significantly influence e-government (EGOV) adoption is rejected.

Theory Interaction: The Social Influence Theory suggests that social factors and demographic characteristics significantly impact technology adoption. The near-acceptance of this hypothesis (P-Value: 0.066) indicates a trend that may require further investigation with a larger sample size or additional variables. The Unified Theory of Acceptance and Use of Technology (UTAUT) also emphasizes the role of social influence, implying that while these factors are influential, their effect might be moderated by other elements such as facilitating conditions and user expectations.

Hypothesis 4: ICT-EGOV Result: Accepted (Original Sample: 0.291, T-Statistics: 2.774, P-Value: 0.006) Dialogue with Relevant Theory: Result: The hypothesis that technology infrastructure and knowledge (ICT) significantly influence e-government

Table 3: ***Hypotheses Results***

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (IO/STDEV)	P Values	
BUD-EGOV	-0.400	-0.434	0.290	1.379	0.168	Rejected
INF - EGOV	0.275	0.300	0.191	1.437	0.151	Rejected
HRM-EGOV	0.772	0.784	0.420	1.837	0.066	Rejected
ICT-EGOV	0.291	0.292	0.105	2.774	0.006	Accepted

Source: Scopus Database (2022)

(EGOV) adoption is accepted.

DISCUSSION

The hypothesis that technology infrastructure and knowledge (ICT) significantly influence e-government (EGOV) adoption is accepted.

Theory Interaction: This result is consistent with the Technology Acceptance Model (TAM), which underscores the importance of perceived ease of use and perceived usefulness in technology adoption. The strong statistical support for this hypothesis reinforces the critical role of technological infrastructure and user competence in facilitating e-government initiatives. (Zhang, 2018)This finding is also supported by the TOE framework, which highlights technological factors as essential for the successful adoption of innovations in organizations.(Adyawarman, 2021) The results indicate a nuanced relationship between cultural factors and e-government adoption. (Jeronymo, 2021) While cultural norms and attitudes may influence citizen willingness to engage with digital governance platforms, the magnitude of this influence appears to vary across different contexts. The rejection of Hypothesis 1 suggests that cultural factors alone may not be sufficient predictors of e-government adoption in Uganda.(Rinaldi, 2023) In contrast, the strong positive coefficients associated with Theory X1 underscore the critical role of infrastructure in facilitating e-government initiatives.(Lin et al., 2017) The high coefficients (INF1: 0.937, INF2: 0.927) indicate a robust relationship between infrastructure and e-government implementation. This suggests that investments in ICT infrastructure, such as internet connectivity and technological resources, are essential for overcoming barriers to digital governance adoption in Uganda.(Døssing et al., 2011)

While cultural factors may influence citizen perceptions and behaviour's, they are intricately linked with the availability and accessibility of infrastructure. Inadequate infrastructure can undermine efforts to promote e-government adoption, regardless of cultural attitudes towards digital governance. Therefore, a comprehensive approach that addresses both cultural and infrastructural challenges is necessary to foster effective e-government implementation in Uganda. (Linkov, 2018)

The results of Hypothesis 2, which examined the relationship between ICT infrastructure (INF) and e-government (EGOV), show a coefficient of 0.275 with a standard error of 0.300, a t-value of 1.437, and a p-value of 0.151. This indicates a positive but not statistically significant relationship between ICT infrastructure and e-government. Despite the positive coefficient suggesting that better ICT infrastructure could potentially enhance e-government services, the high standard error and the t-value falling below the critical value for statistical significance mean that we cannot confidently assert this relationship based on the data at hand. The p-value of 0.151, being above the conventional threshold of 0.05, further reinforces the conclusion that the hypothesis must be rejected in this instance.(Saleh & Alyaseen, 2021)

The theoretical perspectives on ICT infrastructure's role in enabling e-government remain relevant and important despite these findings. The Technology Acceptance Model (TAM) suggests that the quality of ICT infrastructure should enhance both the perceived usefulness and ease of use of e-government services, which are crucial for their adoption. Similarly, the Diffusion of Innovations Theory by Everett Rogers posits that the adoption of new technologies depends on their perceived advantages and compatibility, which ICT infrastructure supports. Additionally, Institutional Theory highlights the foundational role of established structures and practices, such as robust ICT infrastructure, in influencing technology adoption within organizations (Shobaruddin, 2019). Therefore, while the data does not show a statistically significant relationship,(Wang & Liu, 2021) the theoretical importance of ICT infrastructure in enabling effective e-government services is still strongly supported. Future research should consider larger sample sizes, address potential measurement errors, and include additional contextual variables to better capture the multifaceted impact of ICT infrastructure on e-government outcomes.(Campinas et al., 2017)

The results of Hypothesis 3, which an-

alyzed the relationship between Human Resource Management (HRM) practices and e-government (EGOV) adoption, show a coefficient of 0.772 with a standard error of 0.784, a t-value of 1.837, and a p-value of 0.066. Despite the coefficient suggesting a strong positive relationship between HRM practices and e-government adoption, the high standard error indicates considerable variability in the estimate. The t-value of 1.837,(Hooda & Singla, 2021) while relatively close to the threshold for statistical significance, coupled with a p-value of 0.066, indicates that the hypothesis is rejected at the conventional significance level ($p < 0.05$). This means that, according to the data, we cannot conclusively say that HRM practices significantly impact e-government adoption in the studied context.(Pereira, 2018)

Theoretical perspectives on the cultural implications of e-government adoption provide a valuable lens through which to interpret these results. Theories such as Hofstede's Cultural Dimensions suggest that cultural factors play a crucial role in technology adoption and implementation. For instance, high power distance cultures may face challenges in decentralizing decision-making processes, which are often necessary for effective e-government implementation. Furthermore, cultures with high uncertainty avoidance might resist the changes and innovations brought about by e-government systems. These cultural dynamics could overshadow the direct impact of HRM practices, explaining why the hypothesized relationship between HRM and e-government adoption was not statistically significant in this study.

In addition, Organizational Culture Theory posits that the underlying values, beliefs, and behaviours within an organization shape its approach to adopting new technologies. Effective HRM practices that align with an organization's culture can foster a supportive environment for e-government initiatives.(Langnel, 2020) However, if there is a misalignment between HRM practices and the broader cultural context, the effectiveness of these practices in promoting e-government adoption may be diminished.(Azevedo, 2021) Therefore, while HRM practices are theoretically important for supporting e-government initiatives, their impact may be moderated by broader cultural factors that need to be considered in future research. This suggests that an integrative approach, accounting for both HRM practices and cultural influences, is crucial for understanding and enhancing e-government adoption.

The results of Hypothesis 4, which examined the relationship between Information and Communication Technology (ICT) infrastructure and e-government (EGOV) adoption, indicate a significant positive relationship. The coefficient is 0.291 with a standard error of 0.292, a t-value of 2.774, and a p-value of 0.006. The t-value exceeding 1.96 and the p-value being well below 0.05 confirm the statistical significance of the relationship. This suggests that improvements in ICT infrastructure are associated with enhanced e-government adoption, from a theoretical perspective, the significance of ICT infrastructure in the successful implementation of e-government can be explained by several theories. Firstly, the Resource-Based View (RBV) of the firm emphasizes that the availability and quality of resources, such as ICT infrastructure, are critical for gaining a competitive advantage. In the context of e-government, robust ICT infrastructure serves as a foundational resource that enables the efficient delivery of digital government services, enhances accessibility for citizens, and supports the integration of various governmental functions.(Dammak et al., 2023) The significant positive coefficient in the results suggests that ICT infrastructure is indeed a crucial enabler of e-government, providing the necessary technological backbone for its operations. However, despite its significance, there are several challenges associated with ICT infrastructure in e-government implementation. Infrastructure challenges such as digital divide, inadequate broadband connectivity, and outdated technology can hinder the effectiveness of e-government initiatives(Mutula, 2008a). Theories on digital inequality highlight how disparities in access to ICT can lead to unequal participation in e-government services, thereby limiting their reach and impact. Additionally, the Diffusion of Innovations Theory suggests that the adoption of new tech-

nologies is influenced by factors such as relative advantage, compatibility, and complexity. Inadequate ICT infrastructure can increase the complexity and reduce the perceived benefits of e-government, thereby slowing down its adoption.(Aswegen et al., 2021) Furthermore, the Technology-Organization-Environment (TOE) framework posits that technological readiness, organizational factors, and environmental contexts collectively influence the adoption of innovations like e-government. Infrastructure challenges fall under the technological readiness component and can act as significant barriers if not addressed adequately, In summary, the positive and statistically significant relationship between ICT infrastructure and e-government adoption underscores the importance of investing in robust ICT systems to support e-government initiatives. However, addressing infrastructure challenges such as digital divide and technological obsolescence is essential to fully realize the potential of e government. Future efforts should focus on enhancing ICT infrastructure, promoting digital inclusion, and ensuring that technological advancements are aligned with organizational and environmental contexts to overcome these challenges and achieve sustainable e-government implementation.

CONCLUSION

The findings from this study provide substantial insights into the factors influencing e-government (EGOV) adoption in Uganda, with a specific focus on the roles of technology infrastructure and knowledge (ICT), human resource management (HRM) practices, and cultural factors. The acceptance of the hypothesis that ICT significantly influences EGOV adoption aligns with both the Technology Acceptance Model (TAM) and the Technology-Organization-Environment (TOE) framework, underscoring the importance of technological infrastructure and user competence. However, the nuanced relationship between cultural factors and e-government adoption suggests that cultural norms and attitudes alone are insufficient predictors of EGOV adoption. Instead, a comprehensive approach addressing both cultural and infrastructural challenges is essential.

This study contributes to the theoretical discourse on e-government adoption by affirming the critical role of ICT infrastructure, as posited by TAM, the Diffusion of Innovations Theory, and Institutional Theory. Despite the rejection of some hypotheses, the findings reinforce the theoretical importance of robust technological infrastructure in facilitating e-government services. Additionally, the study highlights the interplay between cultural factors and technological readiness, suggesting that successful e-government adoption requires an integrative approach that considers both technological and cultural dimension

The practical implications of this research are profound for policymakers and practitioners in Uganda and similar contexts. The strong statistical support for the influence of ICT infrastructure on e-government adoption suggests that investments in internet connectivity, technological resources, and digital literacy are crucial for overcoming barriers to digital governance. Policymakers should focus on enhancing ICT infrastructure and addressing the digital divide to ensure equitable access to e-government services. Additionally, aligning HRM practices with organizational culture can foster a supportive environment for e-government initiatives, although broader cultural factors must also be considered. This study has several limitations that should be acknowledged. The sample size may not have been large enough to capture the full variability in the data, potentially affecting the statistical significance of some hypotheses. Measurement errors and the cross-sectional nature of the data may also limit the generalizability of the findings. Furthermore, the study primarily focuses on Uganda, and the results may not be directly applicable to other contexts with different technological and cultural landscapes.

Future research should address the limitations of this study by employing larger and more diverse sample sizes to enhance the robustness and generalizability of the findings. Longitudinal studies could provide deeper insights into the dynamic nature of e-government adoption over time. Additionally, future research should explore the interaction between cultural factors and ICT in-

frastructure in greater detail, potentially incorporating qualitative methods to capture the nuanced influences of culture on e-government adoption. Expanding the scope to include other countries with varying levels of technological and cultural development could also provide comparative insights and contribute to a more comprehensive understanding of e-government adoption globally.

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