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# NAVIGATING THE E-GOVERNMENT LANDSCAPE IN ZANZIBAR: A COMPREHENSIVE EMPIRICAL ASSESSMENT

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## ABSTRACT

The study about navigating e-government landscape in Zanzibar. This investigation emphasizes the interplay among human and financial resource capitals, governmental policies, and Information Communication Technology (ICT) infrastructure. Significantly, technological readiness is explored as a potential mediator, with digital literacy proposed as a moderating influence. Through an empirical lens, the study employs a comprehensive survey targeting diverse respondents, including public sector employees and citizens, capturing their e-government service interactions and perceptions. Employing a blend of statistical tools, the research unveils that human resource capital, aligned with digital knowledge, amplifies e-government efficacy. Strategic financial investments, especially in areas like training and ICT infrastructure, enhance service adoption. Furthermore, progressive government policies fostering transparency and inclusivity create a fertile ground for e-government growth. ICT, being central, further substantiates the call for robust digital infrastructures to support and expedite adoption. However, the mediating role of technological readiness underscores that simply possessing resources isn't sufficient; their strategic application is vital. Still, the study's scope, defined by its geographical focus on Zanzibar and potential inherent biases, necessitates caution when extrapolating results. In essence, this study provides a distilled perspective on e-government adoption in Zanzibar, offering insights potentially applicable to similar global contexts, urging stakeholders to rethink digital strategies

Keywords: *E-Government Service in Zanzibar, ICT Human Resource Capital, Financial Resource Capital, Technological Readiness Digital Literacy*

# 1. INTRODUCTION

E-government Services Adoption is transitioning from traditional, manual methods of interacting with the government to digital technologies Ospina et al. (2023). This transition entails adoption of these technology-based services by individuals, businesses, or other governmental entities in their day-to-day operations. E-government services adoption process through any country in the world is involved Technology. Zanzibar government as a part of the world introduced E-government in 2012 by introduction of E-government Policy and the related initiatives. Zanzibar Islands currently have ICT (Information and Communications Technology) fiber broadband to ease e-government services. All Zanzibar regions and Districts now use fiber broadband to promote e-government services. Through Zanzibar Information Communication Technology Infrastructure Agency (2021), the fiber networks connect 140 Government institutions for different purposes, including communications and provision of public services. The government achieved different services through ICT infrastructure.

# 2. LITERATURE REVIEW

## 2.1. E-Government in Zanzibar

The study focuses on the public organization and SMEs in the Zanzibar urban area, which have started adopting e-government services to provide goods and services to citizens. Zanzibar Urban West Region, also known as West Zanzibar Region, was selected for several reasons. Firstly, it serves as the administrative and commercial center of the Zanzibar Archipelago, housing numerous public organizations and SMEs. Secondly, it is the heart of e-government service implementation in the region, representing an ideal location to study the impact and challenges of such services. Lastly, the city's unique mix of urban and semi-urban areas offers an excellent backdrop for understanding the variations in e-government service adoption across different demographic and socioeconomic contexts.

The implementation of e-government is a progressive process that often forms four distinct stages: Cataloguing, Transaction, Vertical Integration, and Horizontal Integration (Seepma 2021). These stages represent a developmental continuum of government services online, from first presence to fully integrated e-services. In the first stage, Cataloguing, governments merely use the internet to provide information to citizens. In this stage, government departments display static details on their roles, responsibilities, services, and essential contact information (Ndou 2004). The Zanzibar government has reached this stage, with several government departments maintaining websites that offer citizens access to valuable information about their operations and services.

In the Transaction stage, citizens can access information and interact with the government by conducting various transactions online. The government of Zanzibar has started some of these transactional services; however, full implementation of this stage is still a work in progress. For instance, some services, such as paying taxes and utility bills, are available online. Zanzibar has yet to fully realize this stage of e-government implementation. Although there are instances of partial vertical integration in some departments, comprehensive and consistent implementation across all departments is still in the future. The final stage, Horizontal Integration, is the full integration of e-services across different government departments or agencies (Bwalya 2018).

As Zanzibar continues its march towards digital governance, it is important to ensure that the benefits of e-government are accessible to all citizens. Despite recent advancements in policy, ICT infrastructure, and awareness campaigns, there appears to be limited citizen involvement in the effective utilization of the services.

## 2.2. Theoretical Frameworks and Research Gaps

Empirical evidence has supported the efficacy of e-government services in various developed and developing countries, but these outcomes cannot be generalized due to significant differences in each region's socio-economic, cultural, technological, and political contexts (Ingrams et al. 2020). Existing literature on the adoption of e-government services often focuses on developed countries or more advanced developing countries, providing little insight into unique contexts like Zanzibar.

There is a critical need for a quantitatively driven investigation guided by potentially more applicable theoretical frameworks to understand e-government service adoption in Zanzibar better. This approach would help fill the existing

research gap and contribute to a more nuanced understanding of e-government service adoption in Zanzibar. It would also inform more effective strategies and policies for its successful implementation.

The study emphasizes the importance of adapting theories and frameworks to fit the unique socio-economic, cultural, and technological environment of Zanzibar. This tailored approach is necessary to develop strategies that can effectively address the challenges and leverage the opportunities of e-government in the region. By doing so, the research aims to provide actionable insights that can help policymakers and practitioners in Zanzibar to enhance the adoption and utilization of e-government services.

## 2.3. The Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT is a prominent framework that provides significant insights into technology adoption and use. One of the key contributors to the development of this theory is Venkatesh, who, along with his colleagues, proposed the theory to consolidate various models of technology acceptance (Venkatesh, 2003). The UTAUT is composed of four key constructs, among which is **performance expectancy**. According to (Venkatesh, 2003), performance expectancy is defined as the degree to which an individual believes that utilizing a specific system will augment their job performance. The UTAUT also suggests that the influence of these constructs on technology adoption and use is moderated by certain demographic variables, such as age and gender (Venkatesh, 2003). **Effort expectancy**, another core construct in the Unified Theory of Acceptance and Use of Technology (UTAUT), is defined as the degree to which an individual believes that using a particular system would be free from effort (Venkatesh, 2003). **Social influence** is a construct defined in the Unified Theory of Acceptance and Use of Technology (UTAUT) as the extent to which an individual perceives that important others (such as senior staff members or influential individuals) believe they should use the new system (Venkatesh et al., 2003). As defined by (Venkatesh, 2003). **facilitating conditions** represent the degree to which an individual believes that an existing organizational and technical infrastructure supports the system use. In the Perceived Behavioral Control (TPB/DTPB, C-TAM-TPB) model, facilitating conditions play a critical role, suggesting that individuals are more likely to engage in a behaviour when they perceive they have the necessary resources and opportunities.

## 2.4. Technology Acceptance Theory (TAM)

The Technology Acceptance Model (TAM) has played a significant role in informing the development and adoption of e-government systems. The TAM was originally proposed by Davis (1989) as a theoretical framework to explain end-user acceptance and use of technology across a wide range of computing technologies and user demographics. At its core, the TAM posits those two specific beliefs shape technology acceptance: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Davis (Davis, 1989) defined PU as the potential user's subjective probability that using a particular system, such as a single platform e-payment system, would enhance their job performance. On the other hand, PEU refers to the degree to which the prospective user expects the target system to be free of effort.

## 2.5. Research Hypothesis

### *2.5.1. Human Resource Capital and e-Government Services Adoption*

Management characteristics significantly influence the adoption of e-government services (LunaReyes et al., 2012). A clear vision and strategy are paramount for successful e-government initiatives. Aligning eGovernment projects with online strategies helps address the digital divide (Helbig et al., 2009). Proper change management is essential to mitigate fears and resistance during e-government implementation and Planning remains a crucial managerial skill, with flexibility being vital in e-government projects. Human resources, especially employee capabilities, play a critical role in eGovernment success (Bhuiyan, 2011). Personal and political power dynamics can shape perceptions and acceptance of new e-government services (Wiredu, 2012).

H1: Human Resource Capital significantly influences the adoption of e-government services in Zanzibar.

### *2.5.2. Financial Resource Capital and e-Government Services Adoption*

E-government initiatives necessitate significant funding for their operation and maintenance, relying on ICT infrastructure to automate and digitize services, which encompasses components like application server environments, security, operating systems, and hardware (Apleni & Smuts, 2020). While financial resources critically shape e-government implementation options (Pieterson et al., 2007), organizational budgets, reflecting developmental priorities, are equally significant.

H2: Financial Resource Capital has significant impact on the adoption of e-government services in Zanzibar.

Government Policies and e-Government Services Adoption

Government policies and regulations are important factors in e-government services adoption in any country of the universe. (OECD, 2020) For the digital transformation of government to succeed, digital technologies must be fully embedded in policy-making and service design processes from the outset. The public sector needs to be digital by design. This implies mobilizing existing and emerging technologies and data to rethink and re-engineer business processes and internal operations (OECD, 2020). It is for the development of this policy that shape the guidelines implementation of e-government within the country.

H3: Government Policies significantly influence the adoption of e-government services in Zanzibar**.**

#### *2.5.3. Information Communication Technology and e-Government Services Adoption*

In this situation, according to Azab et al. (2009), e-government is predicated on leveraging the power of technology to deliver services provided by governments. However, many e-government projects in developing countries are still in an early stage and have not achieved many expected outcomes such as cost savings and downsizing, amongst other issues (Azab et al., 2009). It has been understood that, technological development improves the automation of the effective implementation of e-government towards the services adoption in the countries.

H4: Information Communication Technology infrastructure significantly effects the adoption of e-government services in Zanzibar.

#### *2.5.4. Digital Literacy as moderator*

Digital literacy, extending beyond basic computer skills, denotes an individual's capacity to effectively navigate and utilize digital platforms, including e-government services (Gilster, 1997). Essential in the modern digital era, it is a crucial component for the successful implementation and uptake of e-government services, removing potential barriers and enabling efficient user interaction (Van Deursen & Van Dijk, 2014).

## 3. METHODOLOGY

### 3.1. Research Design

The study employed Quantitative research design. The design emphasizes objectivity (Mann, 2012). The research can reduce the potential bias in data interpretation by collecting numerical data and analyzing it using statistical methods. This enhances the credibility and reliability of the findings and supports making precise and valid inferences about the population based on the sampled data (Creswell and Creswell 2018). Secondly, a quantitative approach allows for a broader overview of the situation. Given that this study focuses on e-government service adoption in Zanzibar, it will involve multiple dimensions such as human capital, financial ability, policies, and ICT infrastructure. (Saris and Gallhofer, 2014).

### 3.2. Data collection

The study used primary data that brings several benefits and advantages that are integral for achieving the aims of the study. First, primary data offers data specificity. Since primary data is collected directly from the source, it can be designed and collected to precisely address the research questions and hypotheses of this study (Carl McDaniel and Gates 2010).

#### *3.2.1. Questionnaire Survey*

A questionnaire is a pre-formalized written set of questions to which respondents record their answers, usually within closely defined alternatives. They can be administered personally, distributed electronically, or mailed to the respondents. Questionnaires are less expensive and time consuming than interviews and observation (Sekaran Uma 2014). The questionnaire was supplied to 420 respondents involved in the study. The population of Zanzibar, as of the 2022 census, was approximately 1,889,773 million (National Bureau of Statistics Tanzania, 2022). However, for this study focused on Zanzibar City e-government services adoption, the population of interest might be a subset of this larger group.

### *3.2.2. Simple Random Sampling*

Simple random sampling is often used in surveys and quantitative research designs (Rahi 2017). Apart from that, deciding a proper sample size is a critical step in quantitative research. An adequately sized sample helps to ensure that the results are representative of the overall population and that the study's findings can be generalized. (Mumtaz Ali Memon et al. 2020). The sample size of this study would be decided on a confidence level of 95%, which is quite common in social science research. For the margin of error, this study chooses 5%, which means we are okay if our results are off by 5% in either direction. For the population proportion, because the study does not have a prior estimate, it is common to use 0.5 (or 50%) which maximizes sample size and ensures a more conservative approach.

Here: **Z** is the z-value (for a 95% confidence level, the z-value is 1.96) **P** is the estimated proportion of the population which has the attribute in question (0.5 in our case) **E** is the margin of error (0.05 in our case) So, substituting these values into the formula (Krejcie and Morgan 1970): So, based on this formula, the first sample size should be 384. However, because the study population is finite (650,000), It will be needed to apply a correction formula:

n = n / [1 + ((n - 1) / N)]
Here, n is the first sample size and N is the population size. Substituting these values into the formula:
n = 384 / [1 + ((384 - 1) / 650,000)]
n = 384 / [1 + (383 / 650,000)]
n = 384 / 1.00058923
n = 383.84- Rounding up, the final sample size should be approximately 384 participants.

## 4. FINDINGS

### 4.1. Participants' Demographic Profile

Understanding the demographic profile of the study's participant's aids in interpreting the results within context and understanding the broader implications of the findings. The comprehensive breakdown by gender, age, socioeconomic status, education level, geographical location, work experience, and frequency of e-government service use provided a detailed snapshot of the diverse representation of respondents.

Table 1. Demographic Information (N=400)

| Constructs | Category | Frequency | Percent |
|---|---|---|---|
| Gender | Female | 36 | 9 |
| | Male | 364 | 91 |
| Age | 25-34 years old | 102 | 25.5 |
| | 35-44 years old | 148 | 37 |
| | 45-54 years old | 123 | 30.8 |
| | 55-64 years old | 9 | 2.3 |
| | 65 years old and above | 9 | 2.3 |
| | Below 25 years old | 9 | 2.3 |
| Socio Economic Status | High | 127 | 31.8 |
| | Low | 18 | 4.5 |
| | Low-middle | 124 | 31 |
| | Middle | 18 | 4.5 |
| | Upper-middle | 113 | 28.2 |
| Education Level | Postgraduate degree | 73 | 18.3 |
| | Primary education | 9 | 2.3 |
| | Secondary education | 120 | 30 |
| | Undergraduate degree | 198 | 49.5 |
| Geographical Location (Residence) | Rural | 27 | 6.8 |
| | Suburban | 285 | 71.3 |

| | | | |
|---|---|---|---|
| | Urban | 88 | 22 |
| Experience | 1-2 years | 102 | 25.5 |
| | 3-5 years | 204 | 51 |
| | 6-10 years | 76 | 19 |
| | Less than 1 year | 9 | 2.3 |
| | More than 10 years | 9 | 2.3 |
| Frequency | Daily | 32 | 8 |
| | Monthly | 9 | 2.3 |
| | Occasionally | 15 | 3.8 |
| | Weekly | 344 | 86 |

Source: Field research data, 2024

The table portrays statistical measurements of constructs related to e-government service adoption. Human Resource Capital has a moderate mean of 3.77 with notable variability (SD: 0.94). Financial Resource Capital indicates high financial strength (mean: 4.45) with moderate consistency (SD: 0.71). Government Policies, with a mean of 4.41, and ICT, at a leading mean of 4.58, both reflect strong positive perceptions, especially the latter, which has the most agreement among respondents (SD: 0.39). Digital Literacy and Technological Readiness are high (mean: 4.30 and 4.27 respectively) with moderate response spread.

## 4.2. Measurement Model Assessment

The measurement model, critical in quantifying constructs, was assessed for integrity using methods like goodness of fit, reliability, and validity. Measurement errors, stemming from survey ambiguities or statistical misapplications, can skew reliability or validity. In multivariate analyses, the goal is to minimize these errors, with the advantage being the identification of specific error sources. The study employed the PLS algorithm via Smart PLS 4 software to determine regression weights, highlighting construct relationships. Discussing model fit within PLS-SEM, which lacks a conventional fit metric, scholars like Bentler & Huang (2018) and Henseler et al. (2014) developed fitting measures.

Table 2. Model Fitness

| Model Fit Category | Saturated model | Estimated model |
|---|---|---|
| SRMR | 0.08 | 0.094 |
| d_ULS | 15.055 | 20.727 |
| d_G | 15.207 | 15.229 |
| Chi-square | 21302.101 | 21401.116 |
| NFI | 0.521 | 0.518 |

Source: Field research data, 2024

## 4.3. Heterotrait-Monotrait Ratio (HTMT):

Table 3 employs the Heterotrait-Monotrait Ratio (HTMT) to evaluate discriminant validity of the constructs, a method considered more rigorous than traditional approaches (Henseler et al., 2015). Values should ideally be below 1 to confirm discriminant validity. Most interactions, like 'Digital Literacy' with 'E-government Services Adoption', present low HTMT values (e.g., 0.171), indicating strong discriminant validity. However, certain combinations, such as 'Digital Literacy x Technological Readiness' with an HTMT of 0.747, require closer scrutiny due to their proximity to the threshold.

Table 3. HTMT

| Constructs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01. Digital Literacy | | | | | | | | | | | | |
| 02. E-government Services Adoption | 0.171 | | | | | | | | | | | |
| 03. Financial Source Capital | 0.269 | 0.243 | | | | | | | | | | |
| 04. Government Policies | 0.369 | 0.239 | 0.266 | | | | | | | | | |
| 05. Human Resource Capital | 0.070 | 0.191 | 0.115 | 0.119 | | | | | | | | |
| 06. Information Communication Technology | 0.238 | 0.184 | 0.211 | 0.248 | 0.084 | | | | | | | |
| 07. Technological Readiness | 0.646 | 0.145 | 0.320 | 0.566 | 0.177 | 0.348 | | | | | | |
| 08. Digital Literacy x Human Resource Capital | 0.145 | 0.084 | 0.033 | 0.063 | 0.092 | 0.025 | 0.060 | | | | | |
| 09. Digital Literacy x Government Policies | 0.212 | 0.089 | 0.051 | 0.112 | 0.021 | 0.045 | 0.086 | 0.363 | | | | |
| 10. Digital Literacy x Technological Readiness | 0.124 | 0.065 | 0.045 | 0.071 | 0.028 | 0.061 | 0.236 | 0.405 | 0.747 | | | |
| 11. Digital Literacy x Financial Source Capital | 0.076 | 0.027 | 0.122 | 0.059 | 0.027 | 0.068 | 0.062 | 0.145 | 0.289 | 0.370 | | |
| 12. Digital Literacy x Information Communication Technology | 0.210 | 0.027 | 0.085 | 0.078 | 0.017 | 0.088 | 0.102 | 0.005 | 0.038 | 0.122 | 0.201 | |

Source: Field research data, 2024

## 4.4. Fornell-Larcker Criterion

Table 4 uses the Fornell-Larcker criterion to confirm discriminant validity. This method requires a construct's square root of the AVE to exceed its correlations with other constructs. For instance, 'Digital Literacy' has a value of 0.841, which is higher than its maximum correlation of 0.601 with 'Technological Readiness'. This pattern is evident throughout the table, indicating distinct and unique constructs in the study.

Table 4. Fornell-Larcker criterion

| Constructs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 01. Digital Literacy | 0.841 | | | | | | |
| 02. E-government Services Adoption | 0.179 | 0.837 | | | | | |
| 03. Financial Source Capital | 0.254 | 0.249 | 0.822 | | | | |
| 04. Government Policies | 0.353 | 0.230 | 0.261 | 0.797 | | | |
| 05. Human Resource Capital | 0.024 | 0.193 | 0.107 | 0.127 | 0.853 | | |
| 06. Information Communication Technology | 0.245 | 0.163 | 0.205 | 0.215 | 0.074 | 0.822 | |
| 07. Technological Readiness | 0.601 | 0.141 | 0.305 | 0.579 | 0.169 | 0.330 | 0.815 |

## 4.5. Direct Hypotheses Testing

The direct hypotheses evaluation was centered on discerning the statistical significance of the path coefficients interlinking the constructs. This assessment leveraged the t-statistic as the determinant of the significance threshold for these interrelationships. Within the bounds of this research, the t-statistic was computed utilizing the bootstrapping technique in SmartPLS, employing data collated from 384 participants. Conventionally, a t-value surpassing 1.645 is demonstrative of statistical significance at the 0.05 threshold. Delving into the data showcased in Table 13.

Table 5. Structural Path Analysis Results

| *Hypo* | *Relation* | *Std. Beta* | *Std. Error* | *t-value* | *p values* | *Decision* |
|---|---|---|---|---|---|---|
| H1 | Human Resource Capital -> E-government Services Adoption | 0.171 | 0.054 | 3.112 | 0.002 | **Supported*** ** |
| H2 | Financial Source Capital -> E-government Services Adoption | 0.189 | 0.051 | 3.740 | 0.000 | **Supported*** ** |
| H3 | Government Policies -> E-government Services Adoption | 0.189 | 0.057 | 3.338 | 0.001 | **Supported*** ** |
| H4 | Information Communication Technology -> E-government Services Adoption | 0.104 | 0.049 | 2.132 | 0.033 | **Supported*** ** |

Note: *Significance level = <0.05*** .

Source: Field research data, 2024

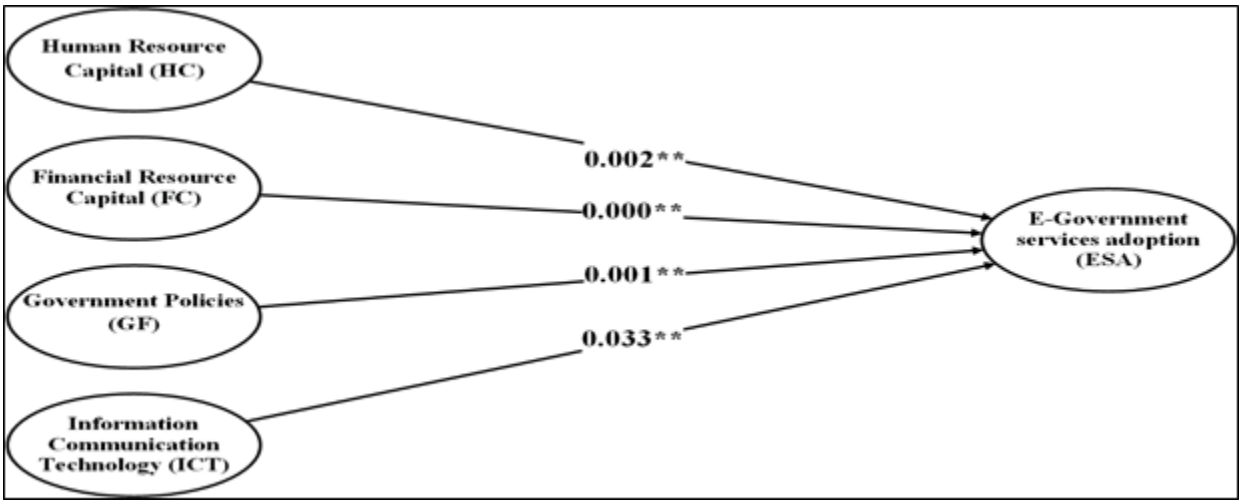


Figure 1. Model with Direct Relationship (Source: Field research data, 2024)

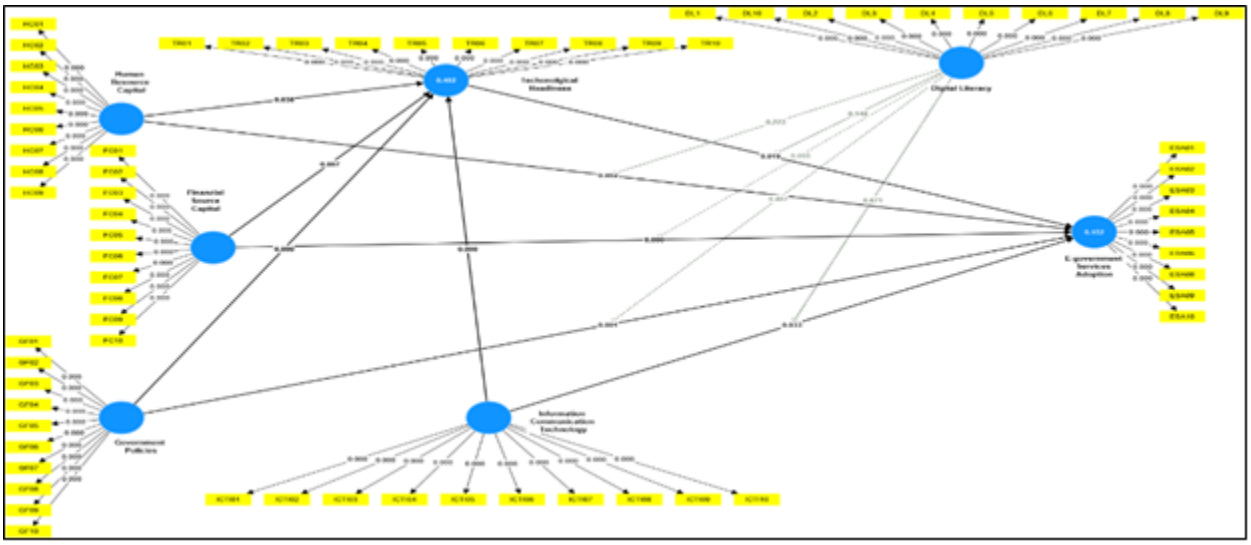

Figure 2. Structural model (Source: Field research, 2024)

**H1:** The hypothesis posited a relationship between Human Resource Capital and E-government Services Adoption. With a standard beta coefficient of 0.171 and a t-value of 3.112, which surpasses the conventional threshold, this relationship is statistically significant (p=0.002). The positive coefficient suggests that as Human Resource Capital increases, there's a corresponding uptick in E-government Services Adoption. Thus, this hypothesis is robustly supported by the data.

**H2:** This hypothesis asserted a relationship between Financial Source Capital and E-government Services Adoption. With a standard beta coefficient of 0.189 and a notable t-value of 3.740, the data solidly supports this assertion (p=0.000). This indicates that Financial Source Capital plays a vital role in promoting E-government Services Adoption. The hypothesis, therefore, stands supported.

**H3:** The link between Government Policies and E-government Services Adoption was the crux of this hypothesis. The findings, characterized by a standard beta coefficient of 0.189 and a t-value of 3.338, underpin this relationship's significance (p=0.001). It underscores that effective government policies can substantially boost the adoption of E-government services. Thus, the hypothesis is empirically supported.

**H4:** The hypothesis delved into the connection between Information Communication Technology (ICT) and E-government Services Adoption. The data reveals a standard beta coefficient of 0.104 and a t-value of 2.132. With a p-value of 0.033, this relationship is statistically significant, albeit weaker in comparison to others.

## 4.6. Coefficient of Determination: $R^2$ Value

The coefficient of determination, denoted as $R^2$, is an essential metric in SEM that offers insights into the proportion of variance in the dependent variables explained by the independent ones. A higher $R^2$ is indicative of the structural model's stronger predictive capacity. However, achieving a sizable $R^2$ value is paramount to ensure the model possesses a satisfactory level of explanatory power. Urbach & Ahlemann (2018) emphasized the significance of large $R^2$ values for enhancing the predictive aptitude of the model. Various scholars have recommended different benchmarks for $R^2$ to be deemed significant. Sullivan and Feinn (2012) suggest an $R^2$ value of at least 0.10 to classify the variance explanation of a construct as sufficient. Cohen (1988) considers $R^2$ values exceeding 0.26 as notable, given the power is more than 0.02. In contrast, Chin (1998) deems $R^2$ values surpassing 0.65 (with power above 0.19) as significant.

## 4.7. Predictive Relevance (Blindfolding): $Q^2$

Predictive relevance within a research model remains a vital consideration, especially when seeking to ascertain the practical utility of the model's findings. The method of blindfolding is prominently employed to gauge this relevance, specifically for endogenous constructs that utilize reflective measurements. Based on recommendations set forth by Hair et al. (2017), the presence of predictive significance for an endogenous construct is affirmed if the $Q^2$ value exceeds 0.

Table 6. Predictive Relevance (Blindfolding) $Q^2$

| | | | |
|---|---|---|---|
| E-government Services Adoption | 0.085 | 0.961 | 0.828 |
| Technological Readiness | 0.378 | 0.795 | 0.612 |

Note: $Q^2$ = <0;

Source: Field research data, 2024.

The data depicted in Table 6 discloses the $Q^2$ values for the constructs E-government Services Adoption and Technological Readiness. Interpreting these results through the lens of Hair et al.'s (2017) benchmarks reveals that the E-government Services Adoption construct exhibits a 'Small' predictive relevance, as the $Q^2$ value is 0.085, falling between the ranges of 0.02 and 0.15.

### 4.8. Moderating Assessment

In this section, the study presents the results of the Structural Path Analysis conducted to test the hypothesized relationships among entrepreneurial capabilities, market orientation, process innovation, IT infrastructure, and firm performance. These hypotheses are derived from a theoretical framework grounded in prior literature and aim to extend our understanding of the factors influencing firm performance. The decision regarding each hypothesis—whether it is supported or not—is made based on the statistical significance of the p-value at a significance level of less than 0.05(Hair et al., 2021).

Table 7. Moderating Findings

| *Hypo* | *Relation* | *Std. Beta* | *Std. Error* | *t-value* | *p values* | *Decision* |
|---|---|---|---|---|---|---|
| ***H5*** | Digital Literacy x Human Resource Capital -> E-government Services Adoption | -0.067 | 0.055 | 1.218 | 0.223 | *Not Supported* |
| ***H6*** | Digital Literacy x Financial Source Capital -> E-government Services Adoption | 0.085 | 0.043 | 1.918 | 0.055 | *Not Supported* |
| ***H7*** | Digital Literacy x Government Policies -> E-government Services Adoption | 0.042 | 0.049 | 0.695 | 0.487 | *Not Supported* |
| ***H8*** | Digital Literacy x Information Communication Technology -> E-government Services Adoption | -0.024 | 0.053 | 0.424 | 0.671 | *Not Supported* |

Note: *Significance level = <0.05***

Source: Field research data, 2024

**H5:** The moderation effect of Digital Literacy on the relationship between Human Resource Capital and E-government Services Adoption was examined. The resulting standard beta value is -0.067 with a p-value of 0.223, which is above the significance level of 0.05. Consequently, this suggests that Digital Literacy does not have a significant moderating effect on the relationship in the context of this study. Thus, H5 is not supported.

**H6:** Similarly, the moderating role of Digital Literacy between Financial Source Capital and E-government Services Adoption was assessed. With a standard beta value of 0.085 and a p-value of 0.055 (marginally exceeding the threshold), the evidence does not support the assertion of a significant moderation by Digital Literacy. Therefore, H6 is also not supported.

**H7:** When considering the relationship between Government Policies and E-government Services Adoption, the role of Digital Literacy as a moderator yielded a standard beta value of 0.042 and a p-value of 0.487. Given that this p-value significantly surpasses the significance threshold, the moderating effect of Digital Literacy in this relationship is deemed non-significant. As such, H7 is not supported.

**H8:** Lastly, the potential moderating effect of Digital Literacy on the relationship between Information Communication Technology and E-government Services Adoption was explored. With a standard beta of -0.024 and a p-value of 0.671, the data does not support the presence of a significant moderating effect by Digital Literacy. Consequently, H8 is not supported.

## 5. DISCUSSION

The discussion section delves deeper into the intricate tapestry of findings unearthed during this research, placing them in the broader context of prevailing academic literature and real-world scenarios. While the data presented offers valuable insights, it's in the synthesis of this data with existing knowledge that true understanding emerges.

Answer to RQ1: How does human resource capital influence the adoption of e-government services in Zanzibar?

The data indicates that human resource capital plays a crucial role in the adoption of e-government services. A trained and informed workforce in Zanzibar can significantly enhance the utilization and efficiency of e-government services. The results from this study underscore the indispensable role of human resource capital in adopting e-government services. A

proficient and well-informed workforce in Zanzibar is a major catalyst in elevating these digital platforms' acceptance and operational efficiency. This finding aligns with previous research emphasizing the importance of skilled human capital in ensuring the successful implementation and adoption of e-government services (Alshehri & Drew, 2010). The availability of trained personnel, familiar with the intricacies of e-services, often serves as a cornerstone for smooth digital transitions.

Answer to RQ2: What is the impact of financial resource capital on the adoption of e-government services in Zanzibar?

Financial resource capital was found to have a variable impact. While it's a fundamental pillar, it requires a strategic allocation to areas like infrastructure development and training to ensure that e-government services are effectively adopted. The study's findings regarding financial resource capital illustrate its nuanced influence on e-government service adoption. Financial resource capital, though integral, requires more than mere allocation; it necessitates a reasonable distribution to crucial sectors like infrastructure development and training for optimal adoption of e-government services. This observation echoes the insights of Shareef, Kumar, Kumar, and Dwivedi (2011), who argued that simply pumping funds into e-government initiatives does not guarantee success. Instead, a comprehensive strategy that addresses the multifaceted requirements of e-government implementation ensures more effective utilization of financial resources.

Answer to RQ3: How does government policies impact the adoption of e-government services in Zanzibar?

Government policies are instrumental in the adoption process. Policies that promote transparency, inclusivity, and technological advancement can foster a conducive environment for the adoption of e-government services. Government policies undeniably shape the terrain of e-government service adoption. The findings from this study underscore the significance of policies that emphasize transparency, inclusivity, and technological innovation, as these can pave the way for a more receptive environment conducive to e-government adoption. This observation aligns with the assertions made by Janowski (2015), who highlighted that well-crafted policies, particularly those focusing on transparency and public participation, can act as catalysts for the success of e-government initiatives. By fostering trust and encouraging citizen engagement, these policies can break barriers to adoption and lead to more widespread utilization of e-services. Conversely, while the overarching theme in the literature emphasizes the vital role of government policies, Grönlund and Horan (2004) point out potential pitfalls.

Answer to RQ4: How does information communication technology affect adopting e-government services in Zanzibar?

ICT is the backbone of e-government services. The better the ICT infrastructure, the more seamless and efficient the services become. Zanzibar's focus on improving ICT infrastructure can significantly bolster the adoption rates. Information communication technology (ICT) has been globally recognized as a foundational pillar for e-government initiatives. The current study's observations about Zanzibar affirm the universal sentiment, suggesting that robust ICT infrastructure can directly enhance the efficiency and user experience of e-government services. This sentiment resonates with the arguments posited by Bwalya and Healy (2010), who emphasized that the efficacy of e-government services is intrinsically tied to the sophistication of the underlying ICT framework. An advanced ICT setup not only ensures the operational smoothness of such services but also instills confidence among users regarding the reliability and accessibility of the platforms.

Answer to RQ5: How does digital literacy moderate the relationship between human resource capital and technology readiness towards adoption of e-government in Zanzibar?

Digital literacy enhances the relationship between human resource capital and technology readiness. A digitally literate population can better harness the potential of e-government services, especially when the workforce is adequately trained. Digital literacy's role in influencing the relationship between human resource capital and technology readiness cannot be understated. The findings from this research align with those of Warschauer (2004), who suggested that digital literacy acts as an enabler, amplifying the benefits of human capital investments in the context of technology adoption.

Answer to RQ6: How does digital literacy moderate the relationship between financial resource capacity and technology readiness towards adoption of e-government services in Zanzibar?

Digital literacy also positively impacts the relationship between financial resource capacity and technology readiness. An informed population can make better financial decisions regarding e-government services, ensuring value for money. In understanding the dynamics between financial resource capacity, digital literacy, and technology readiness, it becomes

evident that these components are intricately linked. One could draw parallels to the findings of Mossberger, Tolbert, and McNeal (2007), who emphasized that financial investments in technology alone might not yield desired outcomes unless coupled with digital literacy efforts. In the context of Zanzibar, an informed and digitally literate populace can ensure that the financial resources earmarked for technology are deployed effectively.

Answer to RQ7: How does digital literacy moderate the relationship between government policies and technology readiness towards adoption of e-government services in Zanzibar?

Government policies that consider digital literacy can expedite the adoption process. The synergy between policies and digital literacy can lead to an environment where e-government services are seamlessly integrated into daily tasks. The interplay between government policies and digital literacy significantly impacts the adoption and integration of e-government services. This interrelationship becomes more pronounced when considering the broader implications of these two elements on the digital transformation of public services.

Answer to RQ8: How does digital literacy moderate the relationship between information communication technology infrastructure and technology readiness toward the adoption of e-government services in Zanzibar?

Digital literacy aids in optimizing the relationship between ICT infrastructure and technological readiness. A digitally literate population can maximize the benefits of a robust ICT infrastructure, leading to better adoption rates. The efficacy of Information Communication Technology (ICT) infrastructure in bolstering e-government services is considerably enhanced when the populace possesses a commendable level of digital literacy. Drawing from the insights of Mossberger et al. (2003), the existence of advanced ICT infrastructure alone is not sufficient. The key lies in the population's ability to adeptly use this infrastructure, where digital literacy becomes indispensable.

## 6. CONCLUSION

Multiple factors influence the adoption of e-government services in Zanzibar. While resources like financial capital and human resource capital are crucial, their effective utilization, guided by government policies and enhanced by digital literacy, is equally important. Technological readiness emerges as a significant mediator, bridging the gap between availability and utilization. As digital services become ever more integral to governance and public administration globally, it's essential to comprehend the distinct elements that contribute to their successful integration, especially in regions with unique cultural, economic, and political landscapes like Zanzibar.

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