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# SUCCESSFUL FACTORS INFLUENCING ADOPTION OF E-GOVERNMENT SERVICES IN ZANZIBAR CITY

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**Abstract:**

The digital revolution is significantly influenced global individual and government activities. Across the globe, governments are gradually implementing e-government services to enable the digital transformation of public service delivery. Developed and developing countries reached at high stage of services provision. Zanzibar City as a part of Tanzania has been implementing e-government since 2012. The aim of the paper is to explore factors influencing the adoption of e-government services in Zanzibar City. This involves analysing the roles of human capital, financial ability, e-government policies, and ICT (Information and Communications Technology) infrastructure. The final aim is to suggest comprehensive actions that could inform future strategies and policies to enhance E-government in Zanzibar on the successful implementation and acceptance of e-government services in Zanzibar. The study involved the following organisations which are Small and Medium Industries development Agency (SMIDA), Zanzibar Association of Tourism Investors (ZATI) and Zanzibar National Chambers of Commerce (ZNCC). They are large numbers of business and services providers in Zanzibar. The study embodied quantitative research design holds significant merit for this study, whereby primary data was in this study ensures that all variables are accurately and comprehensively captured. The study involved 384 respondents. Survey questionnaire used to collect the required information. The results displayed that, six out of the total direct interrelationships being tested surpassed the t-value, cementing their significance at the 0.05 level. The relationships that have been earmarked as significant through this evaluative phase corroborate the study's foundational theoretical propositions and the hypotheses postulated at its start. Such empirical evidence underscores the fact that there are not just hypothetical but statistically significant linkages between the constructs under the microscope. This empirical validation augments the

existing academic discourse in this domain, offering valuable insights for academics and industry stakeholders alike.

## 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. The services included online examination registration and result display displays online jobs advertisement, selections and calls for interviews, and recruitment. Introduction of an electronic payment system for water supply bills to their customers, diving license, national identity, National Passport, birth, death, and marriage registration. The achievements are significant since Zanzibar started implementing e-government services. It investigates the development of the country with e-government services. For example, the Zanzibar E-government Authority (e-GA) could develop a master plan to improve all prerequisite steps that show the highest achievements in adopting e-government services. The study reviewed the existing technological and Critical Success factors theories and policies on e-government implementation in developed countries focusing on public sector. Furthermore, the findings from the study contributed to the knowledge of government officials and decision-making bodies, providing them with new perspectives for advancing e-government development projects and implementing effective change management concepts and strategies. Occasionally, it supplies valuable insights about the implementation process, especially in strategic decision-making for future e-government initiatives as well as the Zanzibar E-government Agency (e-GA). The study suggested the strategies include initiatives to enhance ICT infrastructure, promote digital literacy among the population, and strengthen cybersecurity measures.

## Literature Review

Implementation of E-government is a progressive process that often forms four distinct stages: Cataloguing, Transaction, Vertical Integration, and Horizontal Integration (Seepma 2020) These stages are 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 give 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 keeping websites that provide citizens with 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 is yet to realize this stage of e-government implementation fully. 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). 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 citizen involvement in effective utilisation of the services. However, there appears to be little studies in this area, particularly concerning the E-government services in Zanzibar City. Although empirical evidence has supported the efficacy of e-government services in various developed and developing countries, these outcomes cannot be generalized due to the significant differences in each region's socio-economic, cultural, technological, and political contexts (Ingrams et al. 2020). Existing literature on adopting e-government services focuses on developed countries or more advanced developing countries, supplying little insight into unique contexts like Zanzibar. Moreover, the studies conducted so far have primarily relied on qualitative and methodologies, thus leaving a significant gap in quantitative, statistically valid findings. Apart from that, from a theoretical perspective, existing studies have primarily relied on established theories such as the Theory of Reasoned Action (TRA), Theory of Planned Behaviors (TPB), Technology Acceptance Model, Technology Organization Environment, and Diffusion of Innovation. Leaving behind other necessary theories like Institutional and Critical Success factors. The theories could help understand how factors such as human capital, financial ability, ICT infrastructure, and e-government policies interact in the Zanzibari context. Therefore, this study finds a critical need for a quantitatively driven investigation guided by potentially more applicable theoretical frameworks. This approach would help fill the existing research gap and contribute to a more nuanced understanding of e-government service adoption in Zanzibar, informing more effective strategies and policies for its successful implementation.

## Research Questions

**RQ1:** How does human resource capital influence the adoption of e-government services in Zanzibar?
**RQ2:** What is the impact of financial resource capital on the adoption of e-government services in Zanzibar?
**RQ3:** How do government policies affect the adoption of e-government services in Zanzibar?
**RQ4:** How does information communication technology affect adopting e-government services in Zanzibar?

## Research Aim and Objectives

This research aims to explore factors influencing the adoption of e-government services in Zanzibar. This involves analyzing the roles of human capital, financial ability, e-government policies, and ICT infrastructure. Based on the research questions, the aims of this study are:
**RO1:** To investigate human resource capital, influence the adoption of e-government services in Zanzibar?

**RO2:** To decide the role of financial resource capital in influencing the adoption of e-government services in Zanzibar?

**RO3:** To assess the role of government policies in influencing the adoption of e-government services in Zanzibar?

**RO4:** To analyse the role of information communication technology in influencing the adoption of e-government services in Zanzibar?

### *Underpinning Theory of The Study:*

This study is underpinned by several theoretical frameworks that ease understanding Zanzibar e-government services adoption. These theories supply a well-rounded perspective on e-government services adoption by examining the role of human resource capital, financial resource capital, government policies, and information communication technology,

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

The Unified Theory of Acceptance and Use of Technology (UTAUT) is a prominent framework that supplies significant insights into technology adoption and use. One key contributor to this theory's development is Venkatesh, who, along with his colleagues, proposed the theory to combine various models of technology acceptance (Venkatesh et al. 2003). The UTAUT is composed of four key constructs, among which is

*Performance Expectancy*. According to (Venkatesh et al. 2003), performance expectancy is defined as the degree to which an individual believes that using a specific system will augment their job performance. This construct merges five related factors, including perceived usefulness (from Technology Acceptance Model (TAM) and TAM2, as well as Combined TAM and TPB (C-TAM-TPB)), extrinsic motivation (from Motivational Model (MM)), job-fit (from Model of PC Utilization (MPCU), relative advantage (from Innovation Diffusion Theory (IDT), and outcome expectations (from Social Cognitive Theory (SCT)). 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 et al. 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 et al. 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 et al. (2003),

*Easing Conditions* are 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, easing 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.

### *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 1989a) 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 (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. The TAM further acknowledges that these feelings might be shaped by other factors, referred to as external variables within the model. The model has undergone several refinements, with the final iteration, TAM3, being developed by (Venkatesh et al. 2003).

### *Conceptual Framework of this Study:*

The conceptual framework for this study offers an illustrative delineation of the assumed interconnections between an array of factors hypothesized to influence the adoption of e-government services within Zanzibar's context. The framework includes several key independent variables—namely, Human Resource Capital, Finacial Resource Capital, Government Policies, and Information Communication Technology, all posited as instrumental determinants directly influencing the adoption of e-government services. (See figure: 1)
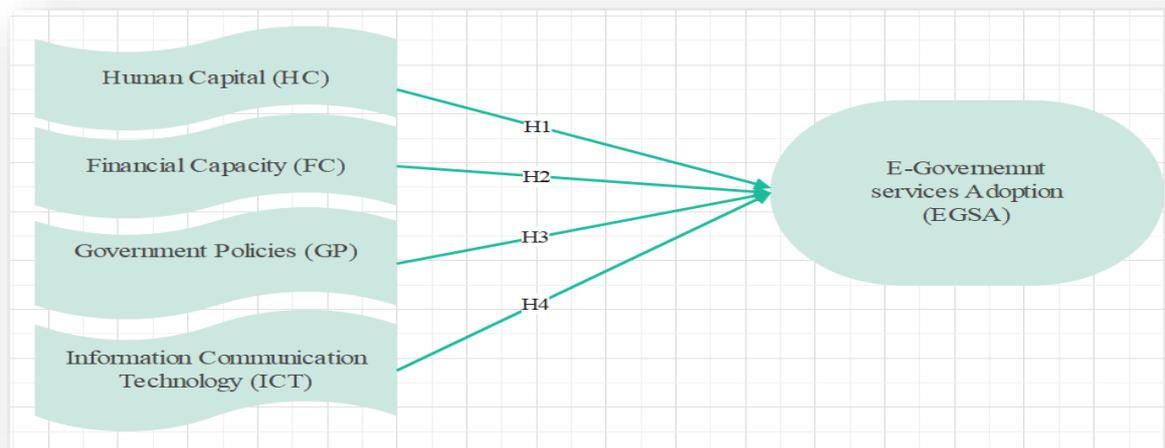


Source: Field research data, 2023

**Figure: 1 Conceptual Framework**

**Research Hypothesis**

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

The organisation's management characteristics play a significant role (Luna Reyes et al., 2012). For example, the implementation readiness of management has consequences for the implementation of e-government services (Tung and Rieck, 2005). The implementation of e-government services adoption life cycle to public services delivery, an unobstructed vision and strategy are important ingredients in e-government initiatives (Naidu, 2015). Personal and political power influence employees' feelings of new e-government services. Some employees are excited about new opportunities, but a potential barrier is lack of time to experiment which is essential to innovation and improving e-government services (Anas Ghassan Kanaan, Shahizan Bin Hassan, and Arfan Shahzad, 2016), (Al-Shboul et al, 2014) Management has to realise this kind of working environment so as to create enabling environment for smooth running of the organisations. Making this study successful and examining the role of Managers

and capability in implementing e-government adoption stages. The following hypothesis is developed:

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

### Financial Resource Capital and e-Government Services Adoption:

The implementation of e-government initiatives requires funding to run and keep e-government projects. e-Government services are provided through ICT infrastructure that can automate and digitize e-government services. The e-government ICT infrastructure may consist of several components forming the backbone of e-government implementation, namely infrastructure application server environment, infrastructure security, operating systems, application development tools, data and content management tools, and hardware (Alpern 2020). The implementation of eGovernment in all countries in the world become successful because the countries commit to disburse sufficient budget across government departments; otherwise, other departments will lag in the implementation of e-government projects; hence, resulting in e-government service gaps. Researchers relate the situation on the adoption stages of implementation of e-government in public organisation. Therefore, the following hypothesis will be used to examine the reality.

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

### Government Policies and e-Government Services Adoption:

Government policies and regulations are crucial factors in e-government services adoption in any country of the universe. (OECD 2020b) For the digital transformation of government to succeed, digital technologies must be fully embedded in policymaking 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 2020a). The aim is to simplify procedures, innovate public services, and open multiple channels of communication and engagement with the public and private sectors, the third sector and the public. This is essential to foster public sectors that are more efficient in creating public value and capable of delivering more sustainable and citizen-driven policy results. This policy's development shapes the guidelines for e-government within the country. Therefore, the following hypothesis measures the effectives of the e-government adoption.

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

### Information Communication Technology infrastructure

In this situation, according to (Azab, Kamel, and Dafoulas 2009), e-government is predicated on using 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 found that some technology-related factors have been studied from earlier research. However, no comprehensive study could fulfill all components and factors. It has been understood that technological development improves the automation of the effective implementation of e-government towards the services adoption in the countries. The study intends to evaluate ICT infrastructure's role in improving e-government services in Zanzibar.

*H4: Information Communication Technology Infrastructure Significantly Affects The Adoption of E-Government Services In Zanzibar.*

## Research Methodology

### Research Design:

The study employed Quantitative research design. holds significant merit for this study. This approach is well-suited to address the research questions posed and test the formulated hypotheses due to several reasons. Firstly, quantitative research 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)

### 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).

### 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.

### Population:

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. The target population for this study would logically be those involved in the Zanzibar SMEs public sector.

### Simple Random Sampling

Simple random sampling is often used in surveys and quantitative research designs (Rahi 2017). As in simple random sampling individuals get equal opportunity to take part in the study. Simple random sampling is selected for populations which are highly homogenous where the members of the research are randomly selected to take part in the research (Bhardwaj, 2019). 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). To calculate the sample size, several factors must be considered: the confidence level (how sure we want to be that our sample results reflect the actual population), the margin of error (the amount of error we are willing to accept), and the population proportion (a guess about the

response we are likely to see). 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.

### Data Analysis Technique
Data gathered in the large-scale study were analyzed in the following contexts: (a) response rate and informant competency, (b) respondents' profile analysis, and (d) partial least square estimations. Ongoing data analysis considered First of all, descriptive statistics, inferential analysis, Correlation analysis, and factor analysis are taken as they were important data analysis techniques in the study where the given results displayed in detail. SEM Partial Analysis was used.

### Operationalisation of Human Resource Capital
In this study, the operationalization of human capital was adapted from the Human Capital Index (HCI) developed by Krafft (2018). The construct of human capital was measured using a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The responses will be used to assess the extent to which individuals perceive themselves to have the necessary human capital for effectively using e-Government services in Zanzibar.

**Table:1 Items for Human Resource Capital**

| Construct | Item No | Items |
|---|---|---|
| **Human Capital** (Adapted from Human Capital Index (HCI) (Krafft, 2018) | HC01 | I have received adequate education and training to use e-Government services. |
| | HC02 | I have the necessary skills and knowledge to navigate e-Government platforms. |
| | HC03 | I continuously look to enhance my knowledge and skills related to e-Government services. |

| | | |
|---|---|---|
| | HC04 | I feel confident in my ability to troubleshoot problems when using e-Government services. |
| | HC05 | The skills and knowledge I have are well-recognized and used in the e-Government context. |
| | HC06 | I am comfortable learning modern technologies as they relate to e-Government services. |
| | HC07 | I can adapt and use e-Government services in changing circumstances. |
| | HC08 | I actively seek out opportunities to improve my understanding of e-Government services. |
| | HC09 | I have been involved in training programs or workshops aimed at improving my ability with e-Government services. |
| | HC10 | I have sufficient experience with using online platforms or digital services that enhances my use of e-Government services. |

Source: Adapted from Human Capital Index (HCI) (Krafft, 2018)

***Operationalisation of Financial Resource Capital:***
The operationalization of Financial Capacity in this study includes ten items adapted from Hill, N., Holmes, T., & Morgan, A. (2008). The participants will be asked to show their level of agreement or disagreement on a five-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The items measure various aspects of financial ability. Participants will select the response choice that best is their perspective on each item (see Table 2).

**Table 2: Items for Financial Resource Capital**

| Construct | Item No | Items |
|---|---|---|
| Financial Capacity *(Adapted from Hill, Holmes, & Morgan, 2008).* | FC01 | I feel confident in managing my personal finances. |
| | FC02 | I have a good understanding of basic financial concepts, such as budgeting and saving. |
| | FC03 | I am knowledgeable about different investment options and their potential risks and returns. |
| | FC04 | I consistently set financial goals and work towards achieving them. |
| | FC05 | I effectively track my income and expenses to keep a balanced budget. |
| | FC06 | I am comfortable making decisions about long-term financial planning, such as retirement savings. |

| | FC07 | I have a good understanding of the impact of interest rates and fees on my financial decisions. |
|---|---|---|
| | FC08 | I have a solid emergency fund to handle unexpected expenses. |
| | FC09 | I regularly review and update my financial plan to adapt to changing circumstances. |
| | FC10 | I feel confident in my ability to make informed financial decisions. |

Source: (Adapted from Hill, Holmes, & Morgan, 2008).

## Operationalisation of Government Policies:

To measure the operationalization of e-government policies, a set of ten items was adapted from earlier studies (Ali et al., 2017; Zhu et al., 2022). Participants are asked to show their level of agreement on a five-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The items cover various dimensions of Government policies. The scale supplies a comprehensive framework for evaluating the extent to which e-government policies.

**Table 3: Items for Government Policies**

| Construct | Item No | Items |
|---|---|---|
| Government Policies *(Adapted from Ali et al., 2017; Ho et al., 2018; Zhu et al., 2020).* | GF01 | The e-government policies implemented in my country effectively enhance transparency and accountability. |
| | GF02 | The e-government policies supply easy access to information and services for citizens. |
| | GF03 | I believe that the e-government policies in place promote citizen participation and engagement. |
| | GF04 | The e-government policies contribute to improving the efficiency and effectiveness of government services. |
| | GF05 | The e-government policies prioritize the protection of citizens' privacy and personal data. |
| | GF06 | I am satisfied with the level of responsiveness and timeliness of services provided through e-government. |
| | GF07 | The e-government policies adequately address the digital divide and ensure equal access for all citizens. |
| | GF08 | The e-government policies support innovation and the adoption of modern technologies for improved service delivery. |

| | GF09 | The e-government policies promote collaboration and information sharing among government agencies. |
| | GF10 | The e-government policies positively affect overall governance and public administration. |

Source**:** (Adapted from Ali et al., 2017; Ho et al., 2018; Zhu et al., 2020).

### *Operationalisation of Information Communication Technology*

The operationalization of ICT infrastructure was based on the adaptation of the "Perceived ICT Infrastructure Scale" developed by (Kee and John Wang 2008). The scale consisted of 10 items that assessed participants' feelings of various aspects of ICT infrastructure in their organization. Participants were asked to rate each item on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The items covered various dimensions in ICT. The responses supplied valuable insights into participants' feelings of the state of ICT infrastructure in their organization (See Table 4).

**Table 4: Items for Information Communication Technology**

| Construct | Item No | Items |
|---|---|---|
| ICT infrastructure *(Adapted from "Perceived ICT Infrastructure Scale" developed by Kee and Wang (2008)* | ICTI01 | The ICT infrastructure in my organization is reliable and stable. |
| | ICTI02 | I have easy access to necessary ICT resources and tools. |
| | ICTI03 | The ICT infrastructure in my organization supports efficient communication and collaboration. |
| | ICTI04 | The ICT services provided in my organization are of high quality. |
| | ICTI05 | The ICT infrastructure in my organization is up-to-date and technologically advanced. |
| | ICTI06 | The ICT systems in my organization are user-friendly and easy to use. |
| | ICTI07 | The ICT infrastructure in my organization meets the needs and demands of the users. |
| | ICTI08 | The ICT resources available in my organization are sufficient for performing tasks effectively. |
| | ICTI09 | The ICT infrastructure in my organization enables quick and prompt access to information. |
| | ICTI10 | Overall, I am satisfied with the ICT infrastructure in my organization. |

Source: (Adapted from "Perceived ICT Infrastructure Scale" developed by Wang and Liao (2008)

*Operationalisation of E-Government services adoption:*

The operationalization of e-government services adoption in this study is based on a scale adapted from earlier research studies (Davis 1989b); Venkatesh and Davis, 2000; (Moon and Kim,2001). The construct includes ten items that measure various aspects of e-government services adoption. Participants are asked to rate their agreement with each item on a five-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). (See Table 5).

**Table 5: Items for E-Government Services Adoption**

| Construct | Item No | Items |
|---|---|---|
| e-Government Services Adoption *(Adapted from (Davis, 1989; Venkatesh and Davis, 2000; Moon and Kim, 2001).* | ESA01 | Using e-government services enhances my overall satisfaction with government services. |
| | ESA02 | E-government services are easy to use and navigate. |
| | ESA03 | E-government services save me time and effort compared to traditional offline methods. |
| | ESA04 | I find e-government services to be reliable and secure. |
| | ESA05 | I believe that using e-government services improves my access to government information and resources. |
| | ESA06 | I intend to continue using e-government services in the future. |
| | ESA07 | E-government services provide me with a convenient and efficient way to interact with the government. |
| | ESA08 | I feel confident in using e-government services to complete transactions or obtain information. |
| | ESA09 | E-government services have improved my overall experience with government agencies. |
| | ESA10 | I would recommend e-government services to others. |

Adapted from: (Adapted from (Davis, 1989; Venkatesh and Davis, 2000; Moon and Kim, 2001)

**Results and Discussion.**

To reach the study results specifically in quantitative research like this, there are steps that should be followed. Firstly, the author should clean and code the dataset, then conduct descriptive statistics (i.e., mean, standard deviation, frequency, and percent, as proper. The construct developed according to the study aim. The following testing reliability and Validity testing leading to results were conducted.

*Reliability Testing:*

One of the main requirements of any research process is the reliability of the data and findings. Reliability deals with the consistency, dependability, and replicability of "the results obtained

from a piece of research" (Nunan, (1999). Obtaining comparable results in quantitative research is straightforward because the data is in numerical form. (Lincoln, YS. & Guba, EG., (1985), (Lincoln, Y. S., & Guba, E. G., 1985) point out that instead of obtaining the same results, it is better to think about the dependability and consistency of the data. Therefore, relating to the explanation from the authors, the researcher used it to ensure that different techniques contribute to consistency. To ensure there was reliability in the study. The pilot study was taken. The results showed that Cronbach's Alpha values ranged from 0.852 to 0.945 for the constructs, with an average value of 0.957 across all constructs. In the large-scale survey, the study assessed the measurement model. The study assessed the constructs separately as the current study has two different constructs, reflective and formative constructs. The construct "e-government Services Adoption" highlights loading that oscillates between 0.751 (ESA05) and 0.939 (ESA02), reflecting each item's commendable reliability. The results saw fidelity in measurement for constructs such as "Technological Readiness. It is pivotal to highlight that the researcher omitted specific items, namely ESA10, TR09, TR10, GF01, GF10, HC10, and ICTI10, due to their subpar loading. The exclusions accentuate the rigorous criteria applied to ensure measurement quality.

*Validity Testing:*

(Hammersley, 1987) defined it as "a valid account if it represented accurately the features of the phenomena, that it intended to describe, explain or theorize" (p. 69), (Creswell, 1998). Researchers note that all the strategies aim to strengthen the representation of the data and findings (Winter, 2000). In the current study, the researcher considered validity necessary while confirming the data. Researchers often discuss issues such as objectivity, truth, evidence, reason, fact, and numbers when talking about validity (Winter, 2000) and validity in quantitative research has strict methodological rules and standards. A researcher would commit to achieving the task. The study used three measures to check the discriminant validity (the degree to which items differentiate among constructs or measure distinct concepts) of the measurement model: the cross-loading, the Fornell-Larcker criterion, and HTMT. Researchers consider the average variance extracted (AVE) to set up convergent validity (Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M., (2017). Thus, the AVE is equal to the commonality of a construct. An AVE value of 0.50 or higher shows that, on average, the construct explains more than half of the variance of its indicators using the same logic as the individual indicators. On the other hand, an AVE of less than 0.50 shows that, on average, there are more errors in the items than the variance explained by the construct (Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M., (2017). The Heterotrait-Monotrait Ratio (HTMT) used to evaluate discriminant validity in the constructs. The method compares the correlation of indicators across constructs with the correlation of indicators within the same construct. All the HTMT values are well below the threshold of 0.85, implying that each construct is distinctly different. It confirms satisfactory discriminant validity among the constructs in the model.

**Table no.6 HTMT**

| Construct | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Digital Literacy | | | | | | |
| E-government Services Adoption | 0.171 | | | | | |
| Financial Source Capital | 0.269 | 0.243 | | | | |
| Government _Policies | 0.369 | 0.239 | 0.266 | | | |
| Human Resource Capital | 0.070 | 0.191 | 0.115 | 0.119 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Information Communication Technology | 0.238 | 0.184 | 0.211 | 0.248 | 0.084 | |
| Technological Readiness | 0.646 | 0.145 | 0.320 | 0.566 | 0.177 | 0.348 |

Source: Field research Data, 2023

The Fornell-Larcker criterion is another tool employed to verify discriminant validity. The criterion emphasizes that a construct's square root of the average variance extracted (AVE) should be greater than its correlations with other constructs. A close examination reveals that diagonal values, which, are indeed higher than off-diagonal values in their corresponding rows and columns. It significantly surpasses its other correlations, the highest being 0.601 with Technological Readiness.

**Table No.7 Show Fornell-Larcker Criterion**

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

Source: Field research data, 2023

***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 supplied a detailed snapshot of the diverse representation of respondents. The diversity of participants across various demographics underscores the robustness of the study's findings and its potential generalizability to the larger population. (See the table 1)

**Table. 8: Demography Profile**

| 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 2023

*Gender:*
The study's data highlights a distinct male dominance in the realm of e-government services in Zanzibar. A significant 91% (n=364) of the respondents identified as male, leaving only 9% (n=36) as female. This skewness towards the male gender may allude to a prevalence of men in roles associated with e-government services, or a gender disparity in survey participation itself.

*Age:*
Diving into the age-related data, there is a noticeable concentration of respondents in the middle age brackets. The 25-34 age bracket, being young adults, made up 25.5% (n=102), which might show their active involvement or employment in e-government services. The bracket of 35-44 years was the most represented at 37% (n=148), suggesting that individuals in their mid-professional years significantly engage with e-government initiatives. Those in the 45-54 age bracket, accounting for 30.8% (n=123), also have a notable presence. In contrast, both the younger and older age brackets, specifically below 25 years and 55-64 years, each had a mere 2.3% representation, hinting at their lesser engagement or involvement with e-government services.

*Socio-Economic Status*:
The study captures a spectrum of socio-economic backgrounds. The combined majority belongs to the high (31.8%, n=127) and upper-middle (28.2%, n=113) socio-economic categories. This could be a sign that those with more affluent socio-economic statuses interact more with e-government services. The low-middle category, at 31% (n=124), shows promising inclusivity. However, both the middle and low socio-economic statuses, each at 4.5%, seem to have a limited presence, alluding to restricted access or exposure to e-government services.

## Education Level:

Educationally, the respondents come across as well-educated. Almost half, precisely 49.5% (n=198), have an undergraduate degree, showing a higher education demographic predominance. Secondary and postgraduate degree holders cumulatively match this, reinforcing the notion of a highly educated respondent base. Those with just primary education stand at 2.3%, pointing to potential barriers to their involvement.

## Geographical Location:

Geographically, 71.3% (n=285) of the respondents' hail from suburban regions, highlighted a substantial adoption or accessibility of e-government services in such areas. Urban regions, with a 22% representation, also see active engagement, albeit less than their suburban counterparts. Rural regions, with a representation of 6.8%, seem to have less e-government service penetration.

## Work Experience:

In terms of professional experience, the data underscores a gamut of ability in the field. A dominating 51% (n=204) have an experience range of 3-5 years, marking them as established professionals. Those with 1-2 and 6-10 years of experience signify the emerging and more seasoned professionals, respectively. Interestingly, fresh entrants and veterans, both at 2.3%, have comparable representation, giving insights into the dynamic nature of the workforce in the sector.

## E-Government Service Usage Frequency:

On the frequency of e-government service usage, a whopping 86% (n=344) are weekly users, emphasizing the regularity and consistency of service use. Daily users, at 8%, denote a smaller yet engaged segment. Those who use the services occasionally or monthly, totaling 6.1%, represent the more sporadic user base.
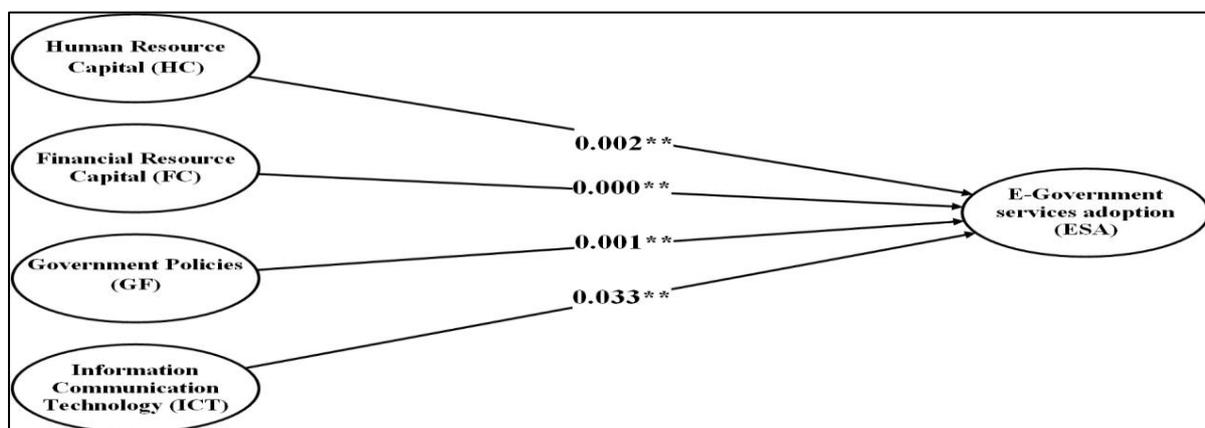
## Direct Hypotheses Testing

The direct hypotheses evaluation was centered on discerning the statistical significance of the path coefficients interlinking the constructs. This assessment used the t-statistic as the determinant of the significance threshold for these interrelationships. Within the bounds of this research, the t-statistic was computed using the bootstrapping technique in Smart PLS, 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 highlighted in Table 6. It becomes clear that six out of the total direct interrelationships being tested surpassed the t-value, cementing their significance at the 0.05 level. The relationships that have been earmarked as significant through this evaluative phase corroborate the study's foundational theoretical propositions and the hypotheses postulated at its start. Such empirical evidence underscores the fact that there are not just hypothetical but statistically significant linkages between the constructs under the microscope (See Figure 1) and (Figure 2) of this study.

| 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 | **Supported*** |
| H2 | Financial Source Capital -> E-government Services Adoption | 0.189 | 0.051 | 3.74 | 0 | **Supported*** |
| H3 | Government Policies -> E-government Services Adoption | 0.189 | 0.057 | 3.338 | 0 | **Supported*** |
| H4 | Information Communication Technology -> E-government Services Adoption | 0.104 | 0.049 | 2.132 | 0.03 | **Supported*** |

Source: Field research data, 2023

**Figure: 2 Direct Hypothesis Testing Results**



Source: Field research data, 2023

**Figure: 3 Direct Hypothesis Model Testing Results**

**Discussion of The Findings**

As we navigate through the specific answers to the research questions posed earlier, this section aims to build a holistic understanding, drawing connections, contrasting findings, and elucidating the nuanced dynamics that influence the adoption of e-government services in Zanzibar. By juxtaposing our results with prior studies and contextual realities, we aim to paint a comprehensive picture, shedding light on both the unique challenges and opportunities presented in Zanzibar's journey towards digital governance.

***Answer to RQ1: How Does Human Resource Capital Influence the Adoption of E-Government Services in Zanzibar?***

The data shows 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 use and efficiency of e-government services. The results from this study underscore the indispensable role of human resource capital in the adoption of e-government services. A proficient and well-informed workforce in Zanzibar has been shown to be a major catalyst in elevating the acceptance and operational efficiency of these digital platforms. This finding aligns with earlier research which emphasizes the importance of skilled human capital in ensuring the successful implementation and adoption of e-government services (Alshehri and Drew 2010). However,

in the context of Zanzibar, human resource capital keeps its primary importance, potentially due to the specific socio-economic and technological dynamics of the region.

### 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 about financial resource capital illustrate its nuanced influence on e-government service adoption. Financial resource capital, though integral, requires more than mere allocation; it needs a judicious distribution to crucial sectors like infrastructure development and training for best adoption of e-government services. This observation echoes the insights of (Joshi and Islam 2018), who argued that simply pumping funds into e-government initiatives does not guarantee success. They posit that more significant investments lead to more successful e-government implementations. Zanzibar's situation, as showed by this study, points towards the necessity of not just ample financial resource capital, but also its strategic use, aligning more with the comprehensive strategy view (Joshi and Islam 2018) rather than a direct financial input-output relationship.

### Answer to RQ3: How Do Government Policies Affect 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 those 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 use of e-services. In the case of Zanzibar, the positive influence of government policies on e-government adoption signifies the nation's ability to devise policies that cater to its unique socio-technological context, rather than adopting a one-size-fits-all approach. This fine-tuning of policies to suit local nuances can be the differentiator between successful and lackluster e-government implementations.

### 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 2009), who emphasized that the efficacy of e-government services is intrinsically tied to the sophistication of the underlying ICT framework. There need to be complementing factors, like user education,

digital literacy, and supportive policies. The holistic development of e-government services in Zanzibar depends on a symbiotic relationship between robust ICT infrastructure and an ecosystem that can optimally use this infrastructure.

## Conclusion

The successful factors of e-government services adoption in Zanzibar are vital plays important in the development of e-government. However, in the recent development of the world there are so many factors that forefront the success of e-government. The study found that there is direct effect between the four crucial factors examined in detail from this study. The government must put forwards effort to make sure that, transform the services delivery in the exploration of the emerging technologies like 5G, Artificial Intelligence, and Blockchain, evaluating their potential roles in the e-government scenario of Zanzibar. This scenario can streamline processes, reduce bureaucratic delays, and enhance transparency, leading to potential cost savings and economic boosts.

## Recommendation

The current study supplies recommendations in the considerations of the pursuit of understanding the factors that influence the adoption of e-government services and its implications to Zanzibar. In this section, therefore, recommends future research delves deeper into the nuances of each construct. Studies designs understand the specific components of human resource capital that influence the adoption. Furthermore, comparative studies between regions or countries supply global insights into the phenomenon. The landscape of e-government service adoption is dynamic, ever-evolving, and influenced by many internal and external factors.

## Acknowledgements

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