

## **Effectiveness of Government's e-Communication in Tanzania: Survey of Dar es Salaam Residents**

### **Abstract**

As governments recognize the capacity of information and communication technologies (ICTs) to create a favourable socioeconomic shift for the populace, digital technologies continue to open up exciting opportunities around the world. This paper presents part of the findings of the research titled "Effectiveness of Government's e-Communication in Tanzania: Survey of Dar es Salaam Residents." The paper set out to explore the views on the government's e-communication services in Tanzania from Dar es Salaam residents. The study relied on the Technology Acceptance Model, which is relevant to the study, as it shows that the majority of the respondents became more interested in e-communications services owing to the ease of use of such services. Likewise, when e-communication devices are deemed difficult by some government officials, there is a likelihood of limited or no use of such e-communication services. The study relied on a survey design, where 150 respondents from selected households in Dar es Salaam were sampled with a structured questionnaire about their knowledge of the e-communication services offered by the various government departments in Tanzania. The majority of the respondents (54%) showed that they had accessed various types of e-communications services; however, one of the drawbacks was that 46% of respondents did not take some of these services very seriously, as they believed that such services were not as efficient as they had thought. Despite the shortcomings associated with e-communications, when asked about the usefulness of e-communication services, the majority of the respondents (46%) strongly agreed that, indeed, the government's e-communication services were critical. It can be concluded that given the wave of technological advancements sweeping across the globe, the government is supposed to strengthen ICT services and the capacity of its officials for more service delivery. This study recommends the need for an e-communication policy and strategic plan as one of the ways to improve the use and promotion of e-communication services in almost all government departments.

**Keywords:** *E-Communication, Services Delivery, Dar es Salaam Residents on e-Government Services, Tanzania, Technology Acceptance Model*

### **1. Introduction**

As governments recognize the capacity of information and communication technologies (ICTs) to create a favorable socioeconomic shift for the populace, digital technologies continue to open up exciting opportunities around the world. Numerous researchers and practitioners have acknowledged and extensively studied the value of ICTs in enhancing government-to-citizen contact through what is commonly referred to as electronic communication (e-communication) (Sawe, 2013; Saxena, 2017; Shaikh & Karjaluto, 2015). While the commercial sector has received the majority of focus on e-communication, citizens and public leaders are becoming more aware of the

opportunity for e-communication to enhance public communication with the government. Electronic government, or e-government, has become a tool that can assist government organizations by lowering costs, enhancing coordination and communications, increasing citizen participation, and improving government accountability.

Governments may enhance their operations and services by more effectively leveraging IT at all levels, according to both citizens and policymakers. Governments all over the world have passed several laws over the past ten years encouraging government agencies to upgrade their IT and proactively adopt e-government. A road map for the adoption of e-government and more effective and efficient use of IT has been developed through several particular laws. For instance, the Clinger-Cohen Act of 1996, which was later repealed by the E-Government Act of 2002, was developed in the United States and advanced the better management and promotion of electronic government services and operations. Since then, numerous governments in developing nations such as Tanzania have adopted a similar approach. The use of e-communications by government ministries, departments, and agencies is stressed in Tanzania's ICT Policy (2016) as a means of assuring better service delivery to the public (United Republic of Tanzania, 2016).

However, there are numerous barriers that e-government initiatives must overcome before they can bear fruit. These barriers may be technical, organizational, social, cultural, and psychological (Heeks, 2019; Mechling and Applegate 2017). Effective communication among all stakeholders is essential to overcoming these barriers to a successful e-government or IT initiative. Successful e-government requires establishing proper communication channels to share and collaborate the vision, values, and expectations of the community among all stakeholders (Garnett, 1992). Questions about: How useful is e-communication? How easy is it to use by those involved? How is e-communication likely to be perceived by various stakeholders, especially the public? To address some of these questions, this paper gives the perceptions of the various stakeholders regarding the use of e-communication services in Tanzania.

## 2. Literature Review

Nuridin et al. (2022) looked at the social framework for long-term e-government. This paper provides an interpretive analysis of two local e-government case studies based on in-depth interviews with local government information technology (IT) managers, local leaders, and staff. Data analysis based on constructivist grounded theory is needed to completely comprehend how a social system supports e-government systems in local governments in developing nations. The social system theory that was originally developed for industry initiatives was updated in this study for use in public organizations. The distinctive characteristics of the public sector and e-government innovation are utilized to find new components of the social system related to local e-government. To assist municipal e-government, social system players must collaborate to utilize resources and solve challenges.

Szopiski and Staniewski (2017) examined the use of e-government in Europe's post-communist countries. The goal of the study was to ascertain how frequently e-government services were used in post-communist countries of the European Union.

Participating in the survey were 7,984 individuals from the nations of Bulgaria, Romania, the Czech Republic, Slovakia, Hungary, Poland, Lithuania, Latvia, and Estonia. The analysis focused on the following examples of e-administration use in these nations: emailing public administrations, visiting websites run by public administration bodies, downloading forms necessary to obtain a public service, sending completed electronic forms to appropriate offices, and communicating electronically with politicians, activists, or offices to discuss issues crucial for a region or a state. The results of the analysis show that a respondent's propensity to use different e-government services and the state in which they reside are statistically correlated.

Saxena (2018) investigated how the uptake of mobile government (m-government) services in India was impacted by "perceived risks". This article has focused on the role of "perceived risks" coupled with "social efficacy," "influence" of important individuals, and "attitude" on the uptake of m-government services in India. "Privacy risks" are regarded as one of the key factors affecting the uptake of e-services. In particular, 311 genuine users of m-government participated in the study, and constructs from theories including the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), and Theory of Planned Behavior (TPB) were used to produce the study.

A situational analysis reveals that Tanzania has various government programs for electronic communication. The programs include a few G2C (Government to Citizen) channels for information sharing (Øystein, 2012). Government websites that provide useful content to the public, as well as information and communication features, such as government gazette, circulars, news/updates, budgets, e-Newsletters, video and photo galleries, advertisements/public notes, feature articles, tenders, and vacancies, are examples of G2C services (Saxena, 2018). On numerous digital platforms, including social media sites such as Twitter, Instagram, and Facebook as well as other platforms such as YouTube, there are also pages, channels, and accounts. The communication function is carried out via these platforms and websites, which serve as sources of data and resources.

Ajira Portal, corruption complaints, TACAIDS Online Library, REA E-Library, and Tanzania Socio-Economic Database (e-GA, 2020) are only a few of the specific G2C portals that are also accessible. Some portals, such as the government e-mailing system (GMS) and the government mobile platform (mGov), are built to offer two-way communication channels. Both push SMS (government to citizens) and pull SMS (citizens to government) services are available on the mobile platform (e-GA, 2020).

Considering the importance of the government's e-communication and the newness of such services to the public, this study assessed the effectiveness of the government's e-communication in Tanzania.

### **3.Methodology**

The researcher applied a survey design of 150 respondents from selected households in Dar es Salaam. It was complemented with limited qualitative interviews from key expert stakeholders in government-citizen public relations. To collect data, a structured

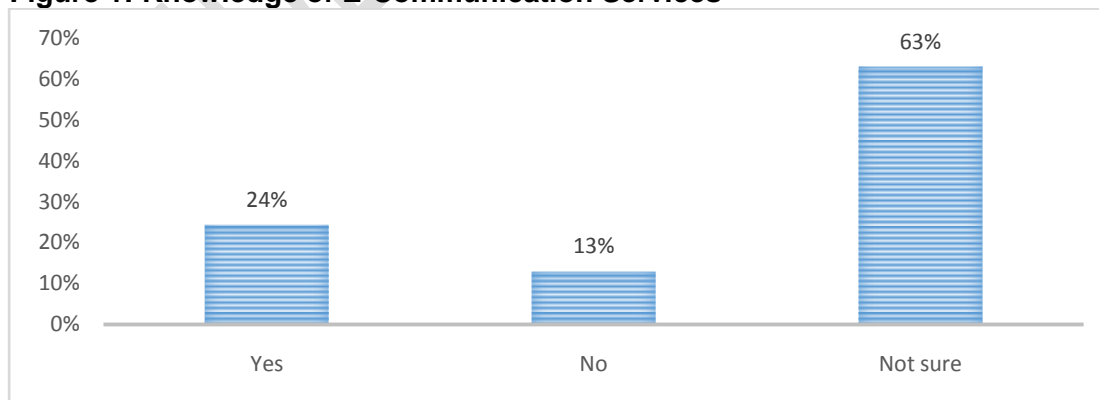
questionnaire based on specific questions regarding the perceptions of e-communications services by the citizens was administered among randomly selected respondents in Dar e Salaam. While the questionnaire was written in English, the researcher asked the questions in Swahili, in which the respondents were conversant. The researcher also administered key informant interviews with selected experts in Tanzania about the role of e-communications services and how the same is perceived by the public. For data collected through the questionnaire, the researcher entered the raw data into Microsoft Excel and went on to analyse the same, where it was analysed and presented using frequencies and illustrated with figures. For qualitative data from the experts, the researcher used thematic analysis, where raw data were transcribed and presented using both reported speech and verbatim statements.

Regarding the theoretical framework, this paper is based on the theory of the technology acceptance model (TAM), which analyses how people come to accept and employ technology, such as e-communication. The point at which people utilize a system is the end-user. An element that influences people's decision to use technology is their behavioral intention. The attitude (A), or general opinion of the technology, has an impact on the behavioral intention (BI). Numerous academics have used various theoretical models to investigate the justification for the adoption of mobile banking. The technology acceptability model (TAM), created by Davis et al. (1989) to describe the factors that influence computer acceptability in general, serves as the foundation for the majority of the concepts employed in these investigations. The TAM appears to be the model that is most frequently employed in research on the acceptability of mobile banking globally (Kim et al., 2009; Ha et al., 2012; Shaikh and Karjaluo, 2015).

#### 4. Result and Discussion

To understand the knowledge about the availability of e-communications services in the government, the respondents were asked whether they were aware of the availability of e-communication services offered by the government. The majority (63%) indicated that they were not sure. Only 24% of the respondents answered in the affirmative, with 13% of the respondents saying no.

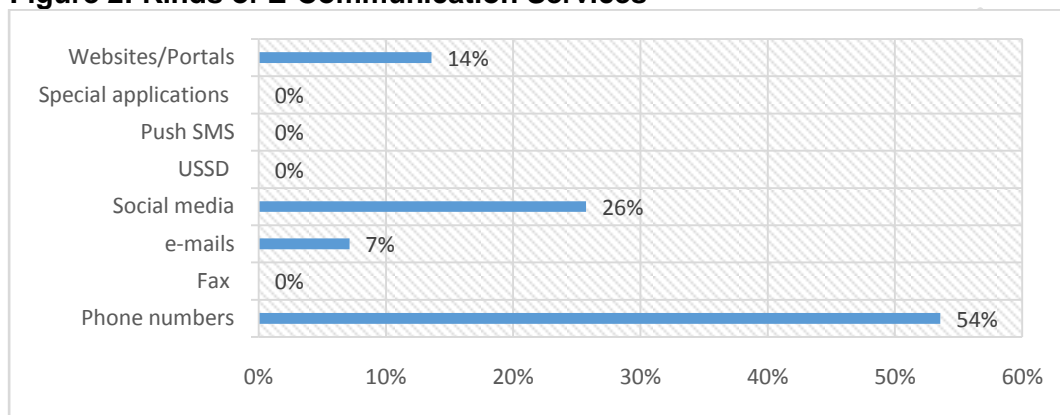
**Figure 1: Knowledge of E-Communication Services**



Source: Research Findings (2023)

The researcher was also interested in knowing the various services the respondents received through e-communication services. The majority (54%) indicated that they were accessing the various governments' e-communication. Only 26% of the respondents showed that they accessed government e-communication through social media, such as Instagram, WhatsApp applications, Facebook, and Twitter. Another chunk of the respondents (14%) showed that they accessed such services through websites.

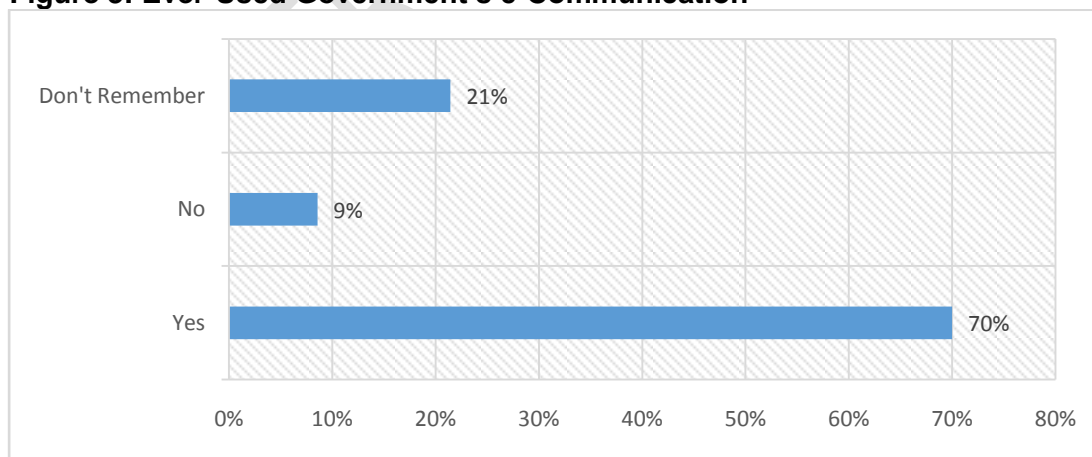
**Figure 2: Kinds of E-Communication Services**



Source: Research Findings (2023)

The majority of the respondents (70%) showed that they had indeed ever used this e-government in search of various government services, with only 21% saying that they had never used these services. Only 9% of the respondents said that they never used these services. The fact that the majority of the respondents (70%) had used these services testifies to the fact that these services are increasingly becoming widespread.

**Figure 3: Ever-Used Government's e-Communication**

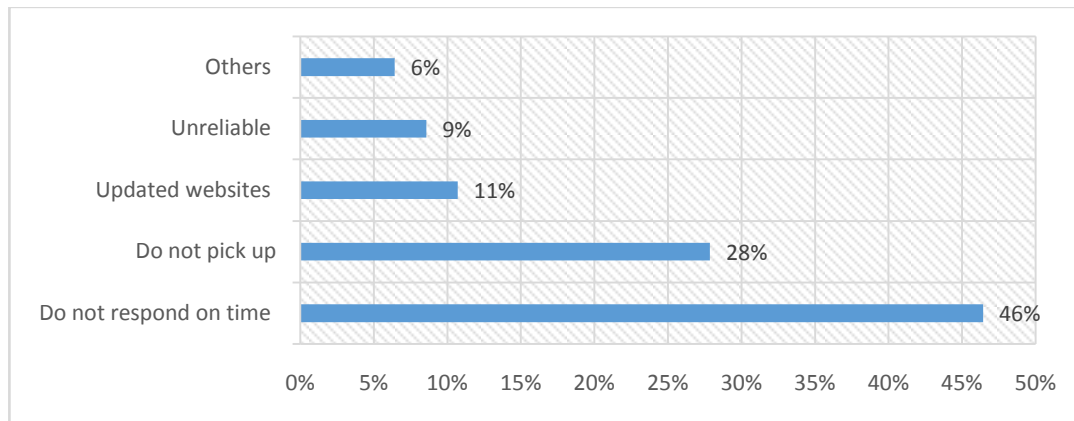


Source: Research Findings (2023)

The study respondents found that 46% of the respondents did not take some of these services very seriously, as they believed that such services were not as efficient as

they had thought. The study further revealed that 28% of the respondents showed that they did not like these services simply because whenever they needed support services from these e-communication channels, they were not always getting the required support.

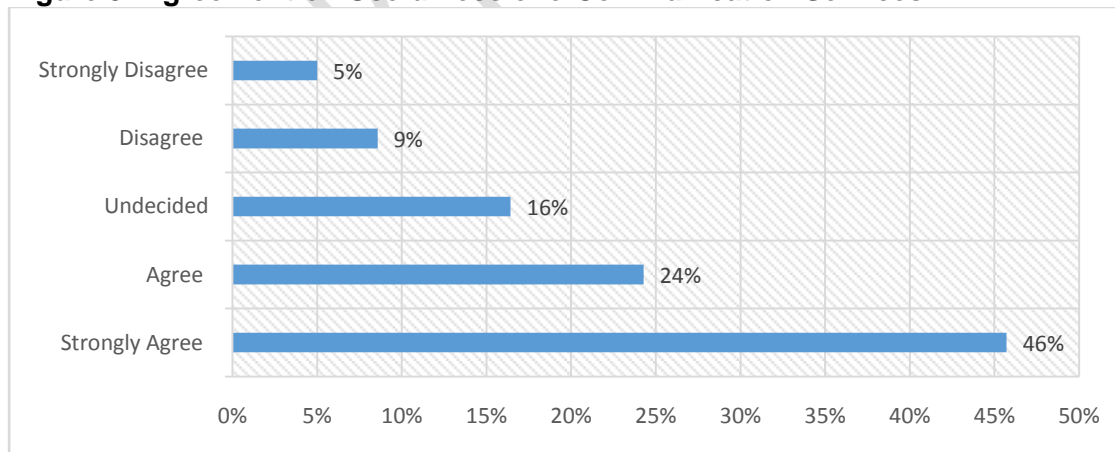
**Figure 4: Why the Government's e-Communication Is Not Preferred**



Source: Research Findings (2023)

Despite the shortcomings associated with e-communications, when asked about the usefulness of e-communication services, the majority of the respondents (46%) strongly agreed that, indeed, the government's e-communication services were critical, with 24% agreeing. Only 16% of the respondents were undecided.

**Figure 5: Agreement on Usefulness of e-Communication Services**



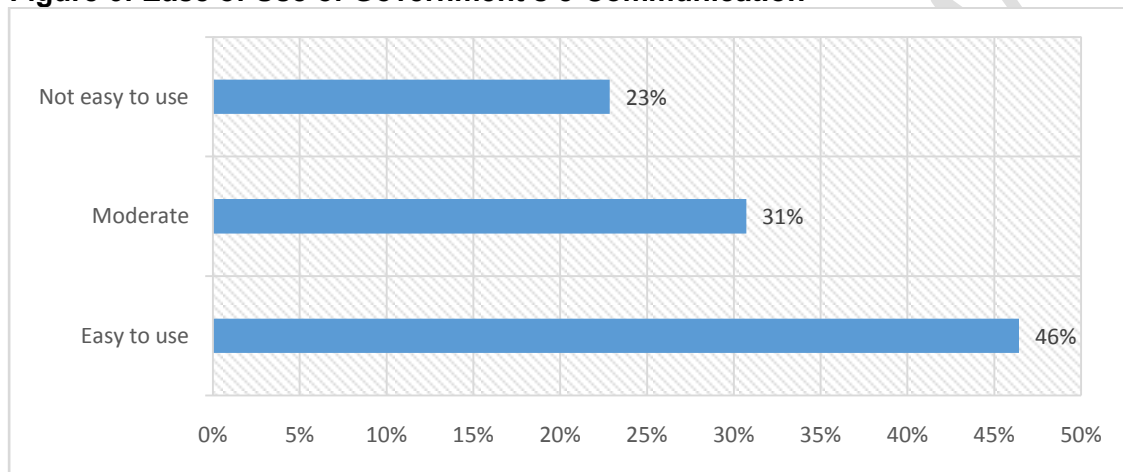
Source: Research Findings (2023)

The majority of the respondents (46%) of the respondents showed that the government's e-communication services were easy to use. This is one of the reasons that the majority of the respondents were indeed happy with the services being

provided through the government's e-communication. They were followed by 31% of the respondents who showed a moderate attitude in regard to the ease of use of the government's e-communication. It was a small percentage (23%) that showed that the government's e-communications services were not easy to use.

This is not surprising, as some previous studies in Tanzania (Mukudu and Abu, 2010; Mwakyusa, 2015; Zhao et al., 2021), based on the technology acceptance model, have shown that for any technology to be effective, including e-communication, certain criteria must be met, including the fact that such technology must be easy to use.

**Figure 6: Ease of Use of Government's e-Communication**



Source: Research Findings (2023)

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Moreover, these findings further show us that the majority of the respondents were aware that the government was using some social media outlets, such as Twitter, WhatsApp, Facebook, and Instagram, to reach out to the public. This was indicated by 54% of the respondents who indicated that they were accessing the various governments' e-communication systems. This indeed testifies to the fact that there is a growing use of social media in service delivery by government agencies. These findings are in line with previous studies by Gokhan (2016), who indicated that

governments around the world are indeed changing the way they are providing services, including the fact that they have now started adopting the use of social media in various aspects.

It was further indicated that the majority of the respondents (53%) accessed the government's e-communication services regularly through social media. This is in line with a previous study by Jim (2020) that indicated that governments around the world are going to migrate their services on the internet, notably through social media, so that they can reach out to a wider spectrum of people. The fact that the majority of the respondents were able to use these governments' e-services daily testifies to the fact that technology has become vital as a communication channel. These findings are indeed in agreement with previous studies that have shown that the use of e-communication by government agencies is increasing. These studies further point out that the use of these services has increased service delivery in the public sector (Mwakyusa, 2015; Akgül, 2017).

## 5. Conclusion

Information and communication technology (ICT) skills are especially crucial since economies are becoming increasingly dependent on technical knowledge and expertise. ICT also has an impact on governments by promoting governance practices, enhancing responsiveness, and boosting efficiency. Governments may promote the use of ICT by providing online services and using new technology themselves. Governments now have new opportunities to modernize, serve, and engage with the public online and through other digital channels thanks to the fast expansion of the internet and other ICTs. Global public services have greatly improved as a result of these ICT industry improvements. The use of electronic government administration is replacing conventional government administration in governments

According to Alshehri and Drew (2011), e-government is now a common area of concentration for government initiatives in many nations worldwide. E-government systems are being developed and deployed by a growing number of governments as a means of lowering costs, enhancing services, saving time, and boosting effectiveness and efficiency in the public sector (Porumbescu, 2013). By utilizing the potential of information and communication technology (ICT) as a tool in daily work, e-government and the internet have fundamentally altered the structure, values, culture, and business practices of the entire society (Saxena, 2017).

The findings of the study align with the TAM, as they indicate that a significant proportion of the participants exhibit increased interest in e-communications services due to the perceived ease of use associated with these services. The evidence suggests that to achieve progress and enhance service provision, governments must use information and communication technology (ICT), as exemplified by industrialized nations such as the United States, which exhibit superior service delivery in comparison to developing countries such as Tanzania. The 2016 Tanzania Communications policy adequately addresses the integration of Information and Communication Technology (ICT) in the field of communications. Government organizations must prioritize the inclusion of pertinent and user-friendly information on their websites and other

platforms. This practice is crucial for enhancing service delivery throughout extensive regions of the nation.

Based on the study findings, there is an overall agreement that e-communication services by the government are user-friendly. Furthermore, there was a widespread use of e-communication services, a sign of the technological revolution that is currently sweeping the world. This implies that any government that wants to serve its people must use e-communication. Tanzania has thus far been doing well regarding the adoption of ICT in its government operations. This has been enabled by the fact that there is already a policy on the e-government, commonly known as Tehema. All these have been enabled by the e-government.

## 6. Recommendations

Owing to the findings of the study, these recommendations are worth taking into consideration:

There exists a necessity to implement electronic communication services inside local government entities. The utilization of electronic services across various government platforms, including local government entities, is particularly significant because a substantial portion of the populace relies on these platforms to obtain governmental services. Furthermore, to enhance the efficacy of e-communication services, it is imperative to provide comprehensive training to a greater number of government personnel, particularly in relation to developing technologies that facilitate efficient service provision. In addition, the effective utilization of e-communication is contingent upon the presence of essential infrastructures and hardware, including computers, tablets, internet connectivity, and phones. Consequently, there is an increased imperative for governmental entities to furnish these vital resources within various ministries, departments, and services to ensure efficient delivery of services.

## References

- Abdul, R.A. (2010). "E-government in Public Sector: Policy Implications and Recommendations for Policy-makers" *Research Journal of International Studies* - Issue 17
- Akgül, Y (2017). Adoption of E-Government Services in Turkey. *AJIT-e: Online*
- ALAwadhi, S., and Morris, A. (2009). Factors influencing the adoption of e-government
- Aliaga, M., & Gunderson, B. (2002). *Interactive Statistics*. New York: Sage
- Alshehri, M & Drew, S. (2011). E-government principles: implementation,
- Alshehri, M., Drew, S., Alfarraj, O. (2012): A Comprehensive Analysis of E-Government Services Adoption in Saudi Arabia: Obstacles and Challenges. *International Journal of Advanced Computer Science and Applications*. 3.

- Annis, C., Hou, J.(J). and Tang, T. (2021), "Perceptions, motivators and barriers of using city management applications among citizens: a focus group approach", *Information Technology & People*, Vol. 34 No. 4, pp. 1338-1356. <https://doi.org/10.1108/ITP-03-2020-0148>
- Arif, I., Afshan, S., Sharif, A. (2016): Resistance to mobile banking adoption in a developing country: evidence from modified TAM model. *Journal of Finance and Economics Research*, 1(1), 25-42.
- Atkinson R and Castro D (2008). Digital quality of life: Understanding the personal and
- Bagozzi, R. P. (2007): The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems*, 8(4), 244-254.
- Basu, S. (2007). E-Government and Developing Countries: *An Overview. International Review of Law Computers & Technology*, Volume 18, No.1, Pages 109–132, March.
- Benbasat, I.; Barki, H. (2007), "Quo vadis, TAM?" (PDF), *Journal of the Association for Information Systems*, 8 (4): 211–218, doi:10.17705/1jais.00126
- Beynon-Davies, P. (2007), "Models for e-government", *Transforming Government: People, Process and Policy*, Vol. 1 No. 1, pp. 7-28. <https://doi.org/10.1108/17506160710733670>
- by region. Retrieved from <https://www.statista.com/statistics/1149410/gdp-per-capita-at-current-prices-in-tanzania-by-region/>
- Carbo, T and Williams, J (2004). Models and metrics for evaluating local electronic
- Chaouali, W., Souiden, N., Ladhari, R. (2017): Explaining adoption of mobile banking with the theory of trying, general self-confidence, and cynicism. *Journal of Retailing and Consumer Services*, 35, 57-67.
- Chaouali, W., Souiden, N., Ladhari, R. (2017): Explaining adoption of mobile banking with the theory of trying, general self-confidence, and cynicism. *Journal of Retailing and Consumer Services*, 35, 57-67.
- Check, J., &Schutt, R. (2012). *Survey research. Research methods in education*. Thousand Oaks, CA: Sage Publications.
- Chen, P (2007). *Electronic Engagement A Guide for Public Sector Managers*,

- Chitungo, S. K., Munongo, S. (2013): Extending the technology acceptance model to mobile banking adoption in rural Zimbabwe. *Journal of business administration and education*, 3(1), 51-79.
- Chohan, S.R., Hu, G., Khan, A.U., Pasha, A.T. and Sheikh, M.A. (2021), "Design and behavior science in government-to-citizens cognitive-communication: a study towards an inclusive framework", *Transforming Government: People, Process and Policy*, Vol. 15 No. 4, pp. 532-549. <https://doi.org/10.1108/TG-05-2020-0079>
- Chuttur, M.Y. (2009), Overview of the Technology Acceptance Model: Origins, Developments and Future Directions, Indiana University, USA, Sprouts: Working Papers on Information Systems, archived from the original on 2013-01-12
- Cohen, L., Manion, L., Morrison, K., & Morrison, R. (2007). *Research methods in education*. Oxfordshire: Routledge.
- Cole, R. D. & Roman, R. (2003). "ICT4D: A Frontier for Higher Education in Developing Nations," *Journal of Africa and Asia Studies*, 2, 381 – 420
- Communication Technology Broadband Backbone (NICTBB) in Tanzania.Lu,
- Creswell, J. W. (2014). *Research Design*.
- Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications
- Curran, J. M., Meuter, M. L. (2005): Self-service technology adoption: comparing three technologies. *Journal of services marketing*, 19(2), 103-113.
- Dada, D. (2006). E-Readiness for Developing Countries: Moving the Focus from the
- Davis, F (1986). A technology acceptance model for empirically testing new end users
- Davis, F, Bagozzi, R, and Warshaw, P (1989). User acceptance of computer
- Davis, F. D., Bagozzi, R. P., Warshaw, P. R. (1989): User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- Development Report; New York: Oxford University Press. World Bank. <https://openknowledge.worldbank.org/handle/10986/11856>

development: an integrative case study of the number one eCity in the Arab World. *Information Technology & People*.

Dimitrova, V., & Chen, Y (2006). Profiling the adopters of e-government information

Eagly, A. H. (1992): Uneven progress: Social psychology and the study of attitudes. *Journal of Personality and Social Psychology*, 63(5), 693-710.

Ebrahim, Z. and Irani, Z. (2005), "E-government adoption: architecture and barriers", *Business Process Management Journal*, Vol. 11 No. 5, pp. 589-611. <https://doi.org/10.1108/14637150510619902>

EGAV (n. d) e-Government Agency Services. United Republic of Tanzania, President's office, Public Service Management.

EURTCM (2021). Websites of Tanzanian Ministries and Government Institutions.

Evenson, A. E.(2000). The telephone patent conspiracy of 1876 : the Elisha Gray-Alexander Bell controversy and its many players. Jefferson, North Carolina. ISBN 0-7864-0883-9. OCLC 45128997.

EY (2015). Integrated Financial Management Information Systems (IFMIS). [ey.com](http://ey.com)

Faria, J (2021), Gross Domestic Product per capita at current prices in Tanzania in 2019,

Fishbein, M., Ajzen, I. (1975): Belief, Attitude, Intention and Behavior: An introduction to theory and research. Reading, MA: Addison-Wesleygovernment systems and services. *Electronic Journal of E-Government*.government: Evidence from Seoul, South Korea. Policy & Internet.

Gregor, S., Imran, A. & Turner, T. (2013). A 'sweet spot' change strategy for a least developed country: leveraging eGovernment in Bangladesh. *European Journal of Information Systems* advance online publication 9 July 2013; doi: 10.1057/ejis.2013.14

Grönlund, Å. (2005): What's in a Field - Exploring the eGovernment Domain. In: Proceedings of the 38th Annual Hawaii International Conference on System Sciences, HICSS.

H,Osmani M, Al-Ayoubi B (2012). An analysis of methodologies utilized in

Ha, K. H., Canedoli, A., Baur, A. W., Bick, M. (2012): Mobile banking—insights on its increasing relevance and most common drivers of adoption. *Electronic Markets*, 22(4), 217-227.

- Heath, R. L., ed. (2005). "Public sphere (Öffentlichkeit)". Encyclopedia of public relations. Vol. 2. SAGE. ISBN 978-0-7619-2733-4.
- Heeks, R. (2001): Understanding e-Governance for Development. Institute for Development Policy and Management, working paper series, paper 11.
- Heeks, R. (2002). eGovernment in Africa: Promise and practice. Information Polity
- Heeks, R. (2013). E-Government in Africa: promise and practice. Institute for Development Policy and Management, Paper No. 13, University of Manchester, the UK.
- Hinchman, L and Hinchman, S (1997). Memory, Identity, Community: The Idea of
- Hoyle, M and Wamukoya, J. (2007). Fostering Trust and Transparency in Governance:  
<https://www.investopedia.com/terms/i/income-per-capita.asp>  
<https://www.skillsyouneed.com/learn/research-ethics.html>
- Hu, P. J.; Chau, P. Y. K.; Sheng, O. R. L. (1999), "Examining the technology acceptance model using physician acceptance of telemedicine technology.", *Journal of Management Information Systems*, 16 (2): 91–112, doi:10.1080/07421222.1999.11518247
- IICD. (2008). "IICD Supported Programme: Telemedicine – Tanzania," IICD. Accessed, 12th Feb, 2009, from: <http://www.iicd.org/projects/tanzaniatelemedicine>. International journal of humanities and social science.
- for Public Relations". In L'Etang, Jacquie; Pieczka, Magda (eds.). Public relations: critical debates and contemporary practice. Routledge. ISBN 978-0-8058-4618-8.
- Jamshed, S. (2014). Qualitative research method- Interviewing and Observation.
- Jun, K.; Yoon, B.; Lee, S; Lee, D. (January 2022). "Factors Influencing Customer Decisions to Use Online Food Delivery Service during the COVID-19 Pandemic". *Foods*. 11 (1): 64. doi:10.3390/foods11010064. ISSN 2304-8158. PMC 8750313. PMID 35010192
- Karokola, G., & Yngström, L. (2009). State of e-government development in the developing world: Case of Tanzania—security view. Proceedings of the ICEG 2009 5th International Conference on e-Government. Boston, USA.

- Kaur, S. (2021). Sample Size Determination. *International Journal of Current*
- Kenton, W (2020). Per Capita Income. Investopedia. Retrieved from
- Kim, Y. J., Chun, J. U., Song, J. (2009): Investigating the role of attitude in technology acceptance from an attitude strength perspective. *International Journal of Information Management*, 29(1), 67-77.
- Kinnunen, J. (1996). "Gabriel Tarde as a Founding Father of Innovation Diffusion Research". *ActaSociologica*. 39 (4): 431–442.
- Kinnunen, J. (1996). "Gabriel Tarde as a Founding Father of Innovation Diffusion Research". *ActaSociologica*. 39 (4): 431–442.
- Kobb, D. (2008). E-government and PSRP Phase II, POPSM, Dar es Salaam, Tanzania.
- Komba, MM., (2013). "Factors influencing access to electronic government information and e-government adoption in selected districts of Tanzania", PhD Thesis, University of South Africa. South Africa
- Kowero, B (2012). Report: Exploiting the Potential of the National Information and
- Legris, P.; Ingham, J.; Collerette, P. (2003), "Why do people use information technology? A critical review of the technology acceptance model", *Information & Management*, 40 (3): 191–204, doi:10.1016/s0378-7206(01)00143-4
- Lule, I., Omwansa, T. K., Waema, T. M. (2012): Application of technology acceptance model (TAM) in m-banking adoption in Kenya. *International Journal of Computing & ICT Research*, 6(1), 31-43.
- Lusekelo, T.M. (2015). Assessment of The Effectiveness of E-Government Initiatives in Public Administration: Critical Look at Dar Es Salaam City Council, Tanzania. A Dissertation Submitted in Partial Fulfillment of the Requirements for The Degree of Master of Business Administration (Leadership & Corporate Governance) of The Open University of Tanzania.
- Lusekelo,T,M. (2015). Assessment of The Effectiveness of E-Government Initiatives in Public Administration: Critical Look at Dar Es Salaam City Council, Tanzania. A Dissertation Submitted in Partial Fulfillment of the Requirements for The Degree of Master of Business Administration (Leadership & Corporate Governance) of The Open University of Tanzania
- Machira, P. (2009). Tanzania needs an ICT backbone to survive. Retrieved on November 25, 2017, from <http://www>.

safarilands.org/index.php/news/more/tanzania\_needs\_ict\_backbone\_to\_survive/

Machira, P. (2009). Tanzania needs an ICT backbone to survive. Retrieved on November 25, 2017, from [http://www.safarilands.org/index.php/news/more/tanzania\\_needs\\_ict\\_backbone\\_to\\_survive/](http://www.safarilands.org/index.php/news/more/tanzania_needs_ict_backbone_to_survive/)

Matavire, R, Chigona, W, Roode, W, Sewchurran, E, Davids, Z

Mercy, M.K. (2016)

Mohamed Dewa and Irina Zlotnikova (2014). Citizens' Readiness for e-Government Services in Tanzania ACSIJ Advances in Computer Science: *An International Journal*, Vol. 3, Issue 4, No.10, July

MoWTC ICT Policy (2016). National Information and Communications Technology Policy. Implementation Strategy 2016/17 – 2020/21. The United Republic of Tanzania. Ministry of Works, Transport and Communication.

Msabila D.T. & Nalaila S.G. (2013). Principles and Practice. *Research Report and Dissertation Writing*.

Mugenda, O. M., & Mugenda, A. G. (2003). Research methods: Quantitative and qualitative approaches. Nairobi: Acts Press.

Mercy, M.K. (2016). Adoption of E-Government Services among Citizens in the Selected Districts of Tanzania *international journal of computer science and technology* IJCST Vol. 7, Issue 3, July - Sept.

Mugenda, O. M., & Mugenda, A. G. (2003). Research methods: Quantitative and qualitative approaches. Nairobi: Acts Press.

Muhammad, S.A, Ali, T., Tariq, E., Farwa, S. (2015-10-09). "Impact of individualism and collectivism over the individual's technology acceptance behaviour: A multigroup analysis between Pakistan and Turkey". *Journal of Enterprise Information Management*. 28 (6): 747–768. doi:10.1108/JEIM-12-2014-0124. ISSN 1741-0398.

Mukudu, A, C Abu, B, (2010). Challenges of eGovernment project implementation in a South African context Authors. *Electronic Journal of Information Systems Evaluation*.

Mwakyusa, L (2015). Assessment of the Effectiveness of E-Government Initiatives in

Nadri, H.; Rahimi, B.; Lotf, N, Hadi; S., Mahnaz; G. (2018). "Factors Affecting Acceptance of Hospital Information Systems Based on Extended

Technology Acceptance Model: A Case Study in Three Paraclinical Departments". *Applied Clinical Informatics*. 09 (2): 238–247. doi:10.1055/s-0038-1641595. PMC 5884692. PMID 29618139

Narcis T. Rwangoga and Asiime Patience Baryayetunga (2006). E-government for Uganda: Challenges and Opportunities. *Advances in Systems Modelling and ICT Applications*

Narrative in the Human Sciences, Albany NY, State University of NY Press.

Nengomasha, C. T., Mchombu, K., and Ngulube, P. (2010). Electronic government initiatives in the public service of Namibia. *African Journal of Library, Archives and Information Science*. Available: [http://findarticles.com/p/articles/mi\\_7002/is\\_2\\_20/ai\\_n56577469/pg\\_7/?tag=content;col1](http://findarticles.com/p/articles/mi_7002/is_2_20/ai_n56577469/pg_7/?tag=content;col1)

Ngulube, P. (2007). The nature and accessibility of e-government in sub-Saharan Africa

NICTP. (2016). National Information and Communications Technology Policy. The United Republic of Tanzania. Ministry of Works, Transport and Communication

Njuru, J (2011). Perspectives of Kenyan Students in the United States on E-government

Nkwe, N. (2012). E-government: challenges and opportunities in Botswana.

Nungu, A (2013). The Case of Learning by Doing and its Applications in Tanzania.

Nuridin, N., Scheepers, H. and Stockdale, R. (2022), "A social system for sustainable e-government", *Journal of Systems and Information Technology*, Vol. 24 No. 1, pp. 1-31. <https://doi.org/10.1108/JSIT-10-2019-0214>

Office – Public Service Management.

Orodho, A. J., (2005) *Essentials of Educational and Social Sciences Research Method*, Nairobi: University of Nairobi Press

Øystein, S.(2012). E-government in Tanzania: Current Status and Future Challenges. H.J. Scholl et al. (Eds.): *EGOV, LNCS 7443*, pp. 198–209, 2012. IFIP International Federation for Information Processing.

Paroški, M., Konjović, Z. and Surla, D. (2013), "Implementation of e-Government at the local level in underdeveloped countries: The case

study of AP Vojvodina", The Electronic Library, Vol. 31 No. 1, pp. 99-118.  
<https://doi.org/10.1108/02640471311299164>

Petty, R. E., Wegener, D. T., Fabrigar, L. R. (1997): Attitudes and attitude change. *Annual review of psychology*, 48(1), 609-647

Phrasisombath, K. (2009, September 22). Sample Size and Sampling Methods.

Ponto, J. (2015). Understanding and Evaluating Survey Research. *Journal of the advanced practitioner in oncology*. 6. 168-171.

Porter, C. E., Donthu, N. (2006): Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of business research*, 59(9), 999-1007.

Porumbescu, G. (2013). Assessing the link between online mass media and trust in

Public Administration: Critical Look at Dar Es Salaam City Council, Tanzania. The Open University of Tanzania.

Publications.

Rauniar, R., Rawski, G., Crumbly, G. & Simms, J. (2009). C2C online auction website performance: buyer's perspective. *Journal of Electronic Research*, 10(2), 56-75.

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology Acceptance Model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6-30.  
<https://doi.org/10.1108/JEIM-04-2012-0011> research agenda. *European Journal of Information Systems*.

*Research*. 09 (48), 365-48367.

Resnick, D. (2015) What is Ethics in Research and Why is it Important? Retrieved from

Retrieved from <https://repository.ubuntunet.net/bitstream/handle/10.20374/195/nungua.pdf?sequence=1&isAllowed=yreview>, International Journal of Electronic Government Research

Rogers, E. (16 August 2003). *Diffusion of Innovations*, 5th Edition. Simon and Schuster. ISBN 978-0-7432-5823-4.

Rogers, E.; Shoemaker, F. (1971). *Communication of innovations: a cross-cultural approach*. Free Press.

Rokhman, A. (2011) Potential Users and Critical Success Factors of E-Government

Role of Social Media in e-Government: an Analysis of Emerging Literature. ICEGOV '17: Proceedings of the 10th International Conference on Theory and Practice of Electronic Governance.

Saadé, R and Kira, D (2009). Computer anxiety in e-learning: The effect of computer

*sampling frame that lists the individuals.* Lismore, Australia: Forest Research Centre, School of Environment, Science and Engineering, Southern Cross University.

Sanbonmatsu, D. M., Vanous, S., Posavac, S. S. (2005): The multiple roles of attitudes in decision making. In: Betsch, T. Haberstroh, S: The routines of decision making, 101-116. <https://www.taylorfrancis.com/books/routines-decision-making-tilmann-betsch-susanne-haberstroh/e/10.4324/9781410611826> [Access Date: 02.03.2021].

Sawe, D. (2007). 'SerikaliMtandao; Madhumuni, Matatizo, Mafanikio, Na Changamoto,' POPSM, Dar Es Salaam, Tanzania. [44]. Schuppan, T. (2008): E-Government in developing countries: Experiences from sub-Saharan Africa. *Government Information Quarterly* 26(1), 118–127

Saxena, S. (2017), "Enhancing ICT infrastructure in public services: Factors influencing mobile government (m-government) adoption in India", *The Bottom Line*, Vol. 30 No. 4, pp. 279-296. <https://doi.org/10.1108/BL-08-2017-0017>

Saxena, S. (2018), "Role of "perceived risks" in adopting mobile government (m-government) services in India", *Foresight*, Vol. 20 No. 2, pp. 190-205. <https://doi.org/10.1108/FS-08-2017-0040>

Schirtzinger, W. (1989). "Crossing the Chasm Summary". High Tech Strategies. Retrieved 2022-07-19.

Shaikh, A. A., Karjaluoto, H. (2015): Mobile banking adoption: A literature review. *Telematics and informatics*, 32(1), 129-142. Social benefits of the information technology revolution.

Solomon, M., Bamossy, G., Askegaard, S., Hogg, M. K. (2006): *Consumer Behavior: A european perspective.* 3 rd ed., Harlow: Pearson Education

Stephen M. Mutula and JannekeMostert, (2010)."Challenges and opportunities of e-government in South Africa", *The Electronic Library*, Vol. 28 Issue 1 pp. 38 – 53

- Szopiński, T. and Staniewski, M.W. (2017), "Manifestations of e-government usage in postcommunist European countries", *Internet Research*, Vol. 27 No. 2, pp. 199-210. <https://doi.org/10.1108/IntR-01-2015-0011>
- Titah, R., and Barki, H. (2006). E-government adoption and acceptance: a literature transformation in Turkey: are these factors the causes of success? *Information Development*. Tribhuvan University.
- United Nations (2012). UN e-Government survey 2012: e-Government for the people.
- URT (2003) National ICT Policy, 2003. Retrieved from <http://www.mct.go.tz>
- URT (2013). Tanzania e-Government Strategy. United Republic of Tanzania: President's
- Valente, T.; Rogers, E. (1995). "The Origins and Development of the Diffusion of Innovations Paradigm as an Example of Scientific Growth". *Science Communication*. 16 (3): 242–273.
- Venkatesh, V. & Davis, F.D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 21(4), 186-204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Wamoto, F. (2015). E-government Implementation in Kenya, an evaluation of Factors hindering or promoting e-government successful implementation. *International Journal of Computer Applications Technology and Research*, Volume 4– Issue 12, 906 – 915.
- West, P. (2016). *Simple random sampling of individual items in the absence of a*
- Williams, C. (2011). Research methods. *Journal of Business & Economics Research*
- Winston, B. (2002). *Media, Technology and Society: A History: From the Telegraph to the Internet*. doi:10.4324/9780203024379. ISBN 9780203024379.
- World Bank (2001) *World Development Report 2000/2001: Attacking Poverty*. World
- World Bank (2012). *The World Bank Annual Report 2012: Volume 1. Main Report*.
- World Bank Annual Report; Washington, DC. World Bank. <https://openknowledge.worldbank.org/handle/10986/11844>

- Wu, J. H., Wang, S. C. (2005): What Drives Mobile Commerce? An empirical evaluation of the revised technology acceptance model. *Information and Management*, 42(5), 719-729.
- Yager, R. R. (1999): Including decision attitude in probabilistic decision making. *International Journal of Approximate Reasoning*, 21(1), 1-21
- Yellapu, V. (2018). Descriptive statistics. *International Journal of Academic Medicine*.
- Yogesh K, Nripendra P, Mina T, Banita L, Sahu, B, Ashish G(2017) Exploring the
- Yonah, Z. (2005). ICTs as Tools for Poverty Reduction. Proceeding of the Discourse on Engineering Contribution in Poverty Reduction.
- Yonazi, J. J. (2010). Enhancing adoption of e-government initiatives in Tanzania. Groningen, The Netherlands: University of Groningen
- Yonazi, Jim. (2010). Enhancing adoption of e-Government initiatives in Tanzania. he
- Yu, C, Liu, C, and Yao, J (2003). Technology acceptance model for wireless
- Yusoff, A. Y. & Lim, S. Y. P. (2003). 'Understanding ICT4D Thematic in Malaysia: A Sourcebook,' UNDP.
- Zeithmal, V.A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362-375. <https://doi.org/10.1177/009207002236911>
- Zhao F, Scavarda A and Waxin M (2021) Key issues and challenges in e-government