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Assessment of User Satisfaction with E-Passport Administration Services in Kilimanjaro Region, Tanzania

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Abstract

In Tanzania, the effectiveness of electronic passport services is inadequate, causing dissatisfaction among users. The excessive document submission required during the pre-application process for e-passports, including 6 to 7 documents like birth certificates and affidavits, has increased the time taken for e-passport applications. This study therefore aimed to determine users' satisfaction on e-passport administration services in the Kilimanjaro region. The study was anchored on the Information Systems Success Model (ISSM) and employed a descriptive research strategy involving a triangulation approach which involves qualitative and quantitative. The study collected primary data using both a structured questionnaire and a Key Informant Interview. The quantitative data collected using a questionnaire was analyzed with the aid of SPSS software using both descriptive and inferential statistics. The findings revealed that improvements in the application process, document submission, and speedy processing times significantly influenced the satisfaction of customers. At the same time, higher costs negatively impacted satisfaction, collectively explaining 62.9% of the variations in user satisfaction. The study concludes that there are critical areas such as; processing stages, status feedback of the application process to be viewed by users on the immigration website, document submissions, processing time, fiber, delivery method, delivery time, payment system interoperability, citizenship interrogation, e-management and decentralization of e-passport to the districts need more improvement in the e-passport system's performance. In view of the findings, this study recommends that the immigration force department should strive to focus on improving the efficiency and reliability of their systems on e-passport services in the Kilimanjaro region.

Keywords: *Customer Satisfaction, E-Passport Services, Interoperability, Service Delivery, E-Passport*

1.1 Introduction

Governments used to provide services to both citizens and business entities through various means such as face-to-face, e-mails, telephones, letters, and advertisements through radio broadcasts among others. These means of communication have been proven to face challenges for example; services are provided during the day and time established by the Government and in some circumstances not all government personnel are service-oriented (Kholis *et al*., 2024). Different researchers have written about how to improve the model by which the government provides services to achieve customer satisfaction through the automation of its processes through the use of Information and Communication Technologies through what is known as electronic government (Sarfraz *et al.,* 2022; Sciepura & Linos, 2024).

Globally, the use of ICT (Information and Communication Technology) and the Internet was introduced to improve public services by shifting their services from manual to electronic services (Al Qudah, 2024). This helps the government to utilize these distribution channels to serve their citizens. Citizen services across borders, throughout the world, are issued through e-passport validation. E-passports or electronic passports contain a contactless smart card used to store digitally signed data and implement security protocols to control access to this data (Mostowski *et al.,* 2024).

Africa has also made significant gains in developing similar electronic passport platforms (Kipchumba, 2015). E-passport was forced down the throats of African states under the banner of New Public Management (NPM) by the Western world as part of austerity measures to improve governance in developing nations. In Sub-Saharan Africa, e-passport was therefore introduced to open up the horizon of many citizens to travel around the world and promote popular participation and investments in ICT (Munyoka & Manzira, 2013). However, a lack of accountability and transparency is still a common occurrence in most African countries leading to corruption (Oye, 2013).

In Nigeria, the e-passport was intended to improve the performance of the government in service delivery and to promote the rule of law (Adeyemo, 2011). According to Okwuke (2013) in Nigeria, the government aims at extending the implementation of e-governance to state and local authorities to promote accessibility and network throughout the country. This is the new ICT policy of the government of Nigeria to promote change and development in the public sector.

Azman and Sharma (2022) discussed a critical issue of interoperability; the ability of diverse systems to function cohesively in the e-passport section. The utilization of Information and Communication Technology is pronounced, by among others, a website that swarms' essential public information extending from service charter, online-based passport applications, production and control, which allows form downloads, online tracing of passports and border management systems (Kipingu & Shayo, 2021). However, studies have recorded a number of challenges that are encountered by migration across various countries, Tanzania inclusive. Among the challenges are inadequate accountability, transparency, and poor staff commitment that narrow down the quality of service delivered.

Adoption of an e-passport strategy in Tanzania could collect providers, customers, and the whole administration into a faultless network on swelling value creation. Despite e-government services being in abode, there has been substandard implementation of the same, especially in the e-passport process. This calls into question the role of ICT in government operations in countries like Tanzania and therefore, the need for this study will assess the customers' satisfaction with e-passports in the Kilimanjaro region.

1.2 Statement of the Problem

There is inadequate effectiveness of electronic passport services to its users' satisfaction in Tanzania. As indicated by Kipingu and Shayo, (2021) excessive document submission during pre-application for an e-passport which includes 6 to 7 documents such as a birth certificate, affidavit for parent, ward letter, application letter, NIDA, and proof of travel and invitation letter has led to the time taken in the application of e-passports in Tanzania. Despite official processing timeframes being 7 days for Dar es Salaam residents and 14 days for applicants from other regions like Kilimanjaro, but still, the prolonged waiting times often extend to nearly a month, a pressing issue that has persisted for years. This time taken has been consistently documented and reported in recent research and government reports. Insufficiency interoperates data transformation from the immigration website to other organization systems like telecommunication banks during the payment process resulting in severe inconvenience and frustration for applicants, disrupting their travel plans and daily lives.

Reviewed studies Kipingu and Shayo (2021); Mbilinyi and Werema (2018) indicated on the effectiveness of e-passports to its users' satisfaction in Tanzania. For example, Shayo (2021) studied factors influencing the adoption of electronic government, while Mbilinyi et al. (2018) investigated challenges facing e-government on infrastructure, user characteristics, and perceived benefits of e-government on service in improving the delivery of public services in Tanzania. Therefore, little is known about customers' satisfaction with e-passports in the Kilimanjaro region.

1.3 Research objective

To determine users satisfaction with e-passport administration services in the Kilimanjaro region.

1.4 Research Questions

What is the level of satisfaction with e-passport administration services in the Kilimanjaro region?

2.1 Theoretical Framework

This study was guided by the Information Systems Success Model (ISSM). The Information Systems Success Model (ISSM), developed by William De Lone and Ephraim McLean (DeLone & McLean, 2013), is a comprehensive framework designed to assess the success of information systems (IS). The model initially proposed six dimensions: System Quality, Information Quality, Service Quality, Use, User Satisfaction, and Net Benefits. These dimensions help in understanding various aspects of IS achievement, from the system quality

and information it provides to its actual usage and the satisfaction it brings to users. Over the years, ISSM has been widely accepted and utilized in evaluating the effectiveness and impact of various information systems, making it a cornerstone in the field of IS research.

The strengths of ISSM lie in its comprehensive nature and multidimensional approach to evaluating information systems success (Adeyemi & Issa, 2020). It provides a clear and detailed framework for assessing various aspects of an information system, from its design and implementation to its use and impact (Nguyen *et al*., 2015). This holistic approach ensures that all critical dimensions contributing to the system's success are considered Al-Adwan *et al*., 2021). Additionally, the model's flexibility allows it to be applied in various contexts and adapted to different types of information systems.

This theory was applied while investigating customers' satisfaction with e-passports users' satisfaction in Kilimanjaro, Tanzania. The model can be employed to assess factors influencing electronic passport services impact various dimensions of system success, especially focusing on system quality and user satisfaction (Hsu, 2023). By applying ISSM, one can analyze whether effective data exchange contributes to higher-quality information and services, leading to greater user satisfaction and perceived net benefits. This application of ISSM is crucial in understanding and improving the relationship between technical efficiency and customer satisfaction in information systems, particularly in the context of electronic passport services.

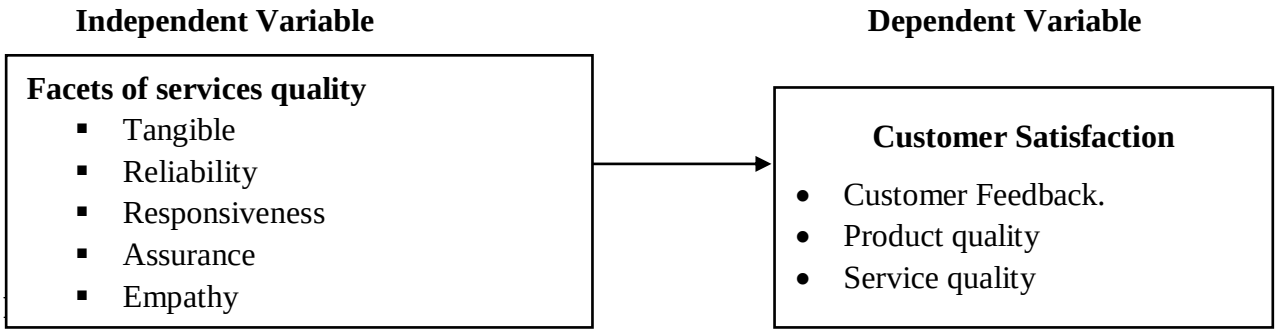
2.2 Empirical Review

Lee *et al.* (2018) conducted a study on e-passport application processes in South Korea. They found that the user-friendliness of the online application system significantly impacted citizen satisfaction. The study revealed that 72% of users appreciated the streamlined process, but 28% still faced difficulties navigating the digital platform, particularly older citizens and those with limited technological literacy. In a similar vein, Adjei-Bamfo, Maloreh-Nyamekye, and Ahenkan (2019) examined e-government services in the United Kingdom, including e-passport applications. Their research highlighted that the clarity of instructions and the intuitiveness of the application interface were crucial factors in user satisfaction. They noted that 80% of respondents found the UK's e-passport application process satisfactory, with the main complaints relating to the complexity of document requirements.

Al-Soud *et al.* (2021) examined the document submission process for e-passports in Jordan. Their research revealed that the transition to digital document submission improved efficiency but also presented challenges. While 60% of users appreciated the convenience of online submission, 40% reported difficulties with scanning documents and understanding file format requirements, impacting their satisfaction levels. Complementing these findings, Chauhan and Kaushik (2019) studied the e-passport application process in India, focusing on document submission. They found that 55% of applicants faced issues with uploading documents due to internet connectivity problems and a lack of clear guidelines on document specifications. This significantly affected user satisfaction, especially in rural areas.

2.3 Conceptual Framework

This study sought to determine users' satisfaction with e-passport administration services in the Kilimanjaro region. The conceptual system clarifies connections among factors making a genuine conclusion about the subject matter. It may be a set of comprehensible ideas or concepts displayed in a way to create simple to communicate to others.



3.1 Research Methodology

This study employed a descriptive research strategy. The choice of this strategy was pivotal as it primarily served to portray the state of affairs as they existed during the research process. The descriptive approach was instrumental in providing specific answers to the 'who,' '(Why there is a problem of inadequate efficiency of e-passport services "what," (what is the number of customers satisfied with e-passports), and 'how'(how to solve the problem of electronic e-passport service delay), the questions raised by the investigation. The focus was on detailing the nature of electronic passport services interoperability in Tanzania and its impact on users' satisfaction.

This study employed a triangulation approach which involves qualitative and quantitative. A triangulation approach requires the use of both qualitative and quantitative approaches. In addition, the researcher optimized the mixed method which requires to use of both quantitative and qualitative methodology in a single study. The study was conducted in the Kilimanjaro Region in Tanzania. The choice of this geographical area was pivotal in understanding the broader implications of electronic passport services across varied regions in Tanzania. The respondents for this study encompassed all Tanzanian citizens in Kilimanjaro region who had had experience in applying for a passport through the Tanzanian immigration website, and immigration department officers. The current population of applicants in Tanzania was 985,342 (Immigration Web site at Management Information System from 2018 up to 2024). This approach is chosen considering that individuals who apply for passports online are typically required to visit Regional immigration offices for interviews and biometric processes like having their photographs and figure print taken. These applicants come from different districts of Kilimanjaro like Moshi District, Moshi Municipal, Rombo, Hai, Same, Siha, and Mwanga.

The sample size was obtained through a formula that correlates to the population and the confidence interval:

$$n = \frac{N}{(1 + N\,(a)^2}$$

Where: n = Sample size, N = Population size, a = margin error (Yamane, 1967 as quoted by Ajah and Micah, 2021).

The formula agreed a confidence level of 90% in which the margin error is 8%, which as per social science research is acceptable.

Consequently, the analysis of each group was designed based on the response of the respondents available within the time, and this sample size is obtained from the known population:

$$n = \frac{985{,}342}{1 + 985{,}342\ (0.08)^2}$$

$n = 156.2 \approx 156$

Thus, the sample size was 156 respondents.

The study employed convenience sampling, a type of non-probabilistic sampling technique. This decision is based on two key considerations relevant to the context of the Kilimanjaro Region. This study used only primary data that was gathered straight from respondents according to objectives. The data was both quantitative and qualitative in nature. Primary sources of data increased the reliability of the collected data since the data was collected directly from respondents. This triangulation approach ensures a more comprehensive understanding of the electronic passport services' effectiveness and user satisfaction in the Kilimanjaro region, thereby providing a well-rounded assessment of the study.

The analysis of the data was guided by the study objectives and an estimate of the obtained data to discover the pattern that was shown in the information that was acquired about the variables.

To assess the connection between variables, a multiple linear regression model was used:

The regression model was:

0 If Not Satisfied

1, If Satisfied

$Y=\beta 0+\beta 1X1+\beta 2X2+\beta 3X3+\ldots\ldots\ldots\ldots+e$

Where:

Y = Customer satisfaction in e-passport services administration

$X1$= Application process (In terms of Time, network, and uses IT skills)

$X2$= Cost (in terms of distance and processing fees)

$X3$= Document submission

X4 = Speed time

$\beta 0$ = The intercept.

e = Error term.

The participants were assured on confidentiality and anonymity in handling of data and information. Further, participants were informed that they were free to withdraw from the study at any time without penalty. Respondents participated based on informed consent. The principle of informed consent involves the researcher providing sufficient information and assurances about taking part to allow individuals to understand the implications of participation and to reach a fully informed, considered, and freely given decision about whether or not to do so, without the exercise of any pressure or coercion.

4.1 Findings and Discussion

The researcher distributed 156 questionnaires to the sampled respondents. The response rate is presented in Table 1.

Table 1: Response Rate

Response	Frequency	Percentage
Completed and returned	151	96.8
Not returned	5	3.2
Total	**156**	**100**

Results in Table 1 shows that out of which 151 questionnaires were fully completed and returned, yielding a response rate of 96.8%. Table 2 shows demographic results.

Table 2: Demographic Results

Category	Sub-category	Frequency	Percentage
Gender	Male	88	58.3%
	Female	63	41.7%
Age	Under 18 years	18	11.9%
	18-24 years	27	17.9%
	25-34 years	49	32.5%
	35-44 years	30	19.9%
	45-54 years	14	9.3%
	55-64 years	11	7.3%
	65 years or older	2	1.3%
Level of Education	No schooling completed	2	1.3%
	High school graduate	25	16.6%
	College	48	31.8%
	Trade/technical/vocational training	23	15.2%
	Bachelor's degree	32	21.2%
	Master's degree	13	8.6%
	Doctorate degree	8	5.3%
Employment Status	Employed full-time	38	25.2%
	Employed part-time	37	24.5%
	Unemployed	65	43%
	Student	9	6%
	Retired	2	1.3%
Residency	Resident of Kilimanjaro region	111	73.5%
	A resident of another district in Tanzania	33	21.9%
	Non-resident of Tanzania	7	4.6%
Frequency of International Travel	Never	6	3.97%
	Rarely (less than once a year)	30	19.9%
	Occasionally (1-2 times a year)	63	41.7%
	Frequently (more than 2 times a year)	52	34.44%
Previous Experience with Electronic Passport Services	Yes	90	59.6%
	No	61	40.4%

The demographic results revealed that the majority of respondents were male (58.3%), while females accounted for 41.7%. Most respondents were younger, with 17.9% aged 18-24 years and 32.5% aged 25-34 years, indicating that younger, more tech-savvy users dominated the e-passport service user base in Kilimanjaro. A smaller percentage were older, with 19.9% aged 35-44 years, 9.3% aged 45-54 years, 7.3% aged 55-64 years, and 1.3% aged 65 years or older. In terms of education, 31.8% had attained a college level of education, 21.2% had a bachelor's degree, and 16.6% were high school graduates. A smaller proportion had a master's degree (8.6%), a doctorate (5.3%), or no formal schooling (1.3%).

In terms of employment, 24.5% were part-time workers, 25.2% were employed full-time, and 43% were self-employed in businesses, while students made up 6% and retirees 1.3%. Most respondents (73.5%) resided in Kilimanjaro, while 21.9% were from other districts within Tanzania, and 4.6% were non-residents. Travel frequency varied, with 41.7% traveling internationally occasionally (1-2 times a year), 34.4% frequently (more than 2 times a year), and 19.9% rarely (less than once a year). A small fraction, 3.97%, never traveled internationally, indicating that many e-passport users in the study area were not frequent travelers but still required reliable services. The majority, 90 (59.6%) of the respondents had

previous experience with e-passport services, while 61 respondents (40.4%) did not. These results indicate that more than half of the respondents are familiar with the e-passport application process, which means they were able to provide valuable information on the effectiveness and user satisfaction of the current system.

4.2 Users' Satisfaction and E-Passport Administration Services

The study sought to determine users' satisfaction on e-passport administration services in Kilimanjaro region.

4.2.1 Descriptive Analysis Results

The respondents were asked to indicate their extent of agreement or disagreement with the statements on customer satisfaction with selected quality attributes. The descriptive statistics on their responses are discussed below. Table 3 shows the descriptive statistics results on usage of e-passport systems.

Table 3: Descriptive Analysis on Usage of E-Passport Systems

Statement	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. Most e-passport transactions succeed and those that fail are resolved timely.	6 (4.00%)	8 (5.30%)	9 (6.00%)	70 (46.40%)	58 (38.40%)	4.12	1.05
2. It takes little time to accomplish my transactions by using the e-passport system.	16 (10.60%)	6 (4.00%)	20 (13.20%)	58 (38.40%)	51 (33.80%)	3.81	1.25
3. Electronic passports minimize attending visiting immigration office in the Kilimanjaro region.	7 (4.60%)	12 (7.90%)	25 (16.60%)	67 (44.40%)	35 (26.50%)	3.8	1.06
4. Very often transactions fails while doing payments for services offered by the Kilimanjaro region Immigration office.	58 (38.40%)	37 (24.50%)	32 (21.20%)	9 (6.00%)	15 (9.90%)	1.75	1.30

The results in Table 3 depicts that majority of the respondents disagreed that most e-passport transactions succeed and those that fail are resolved in a timely manner, as reflected by the high mean score of 4.12 and a standard deviation of 1.05. This indicates a low level of satisfaction with the efficiency and reliability of the e-passport system. The low standard deviation suggests that the responses were relatively consistent among the respondents.

Additionally, majority of the respondents disagreed that it took little time to accomplish transactions using the e-passport system, which was supported by a mean score of 3.81 and a standard deviation of 1.25. This implies that users generally found the system time-inefficient, although the slightly higher standard deviation indicates some variability in their experiences. Additionally, most of the respondents disagreed that the e-passport system minimized the

need to visit the immigration office in Kilimanjaro, evidenced by a mean of 3.8 and a standard deviation of 1.06. Furthermore, most of respondents had the feeling that transactions often failed during payment processes with a higher standard deviation of 1.3. This points to an issue with the payment process within the e-passport system in Tanzania, indicating an area that requires improvement to increase overall user satisfaction.

Reliability of E-Passport Systems

The respondents were also asked to indicate the extent to which they agreed that the reliability of e-passport systems had affected the general Satisfaction level of e-passport users. Their responses were summarized using descriptive statistics in Table 4.

Table 4: Descriptive Analysis of Reliability of E-Passport Systems

Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. Kilimanjaro region Immigration office delivers all the services within the promised deadline.	12 (7.90%)	0 (0.00%)	29 (19.20%)	59 (39.10%)	51 (33.80%)	3.91	1.12
2. You feel safe in all your e-passport payments with the Kilimanjaro region immigration office.	18 (11.90%)	0 (0.00%)	17 (11.30%)	75 (49.70%)	41 (27.20%)	3.8	1.19
3. Kilimanjaro region immigration office maintains error-free records.	9 (6.00%)	3 (2.00%)	19 (12.60%)	60 (39.70%)	60 (39.70%)	4.05	1.07
4. The Authority is sympathetic and reassuring when the customer has problems	30 (19.90%)	19 (12.60%)	27 (17.90%)	54 (35.80%)	21 (13.90%)	3.11	1.35
5. The Authority provides their service at the times promised.	8 (5.30%)	25 (16.60%)	28 (18.50%)	54 (35.80%)	36 (23.80%)	3.56	1.18

Descriptive results in Table 4 shows that majority of the respondents disagreed that the Kilimanjaro region immigration office delivers all services within the promised deadline, with a mean score of 3.91 and a standard deviation of 1.12. This suggests a significant dissatisfaction with the timeliness of service delivery, implying that the e-passport system often fails to meet expected deadlines, which negatively affects user satisfaction. Additionally, majority of respondents disagreed with the statement that they feel safe in all their e-passport payments with the Kilimanjaro region immigration office, as reflected by a mean score of 3.8 and a standard deviation of 1.19. This indicates a lack of accessibility in the system during the payment process, which is likely to negatively affect the overall satisfaction with the e-passport services. Similarly, majority of the respondents disagreed that

the Kilimanjaro region immigration office maintains error-free records, evidenced by a mean score of 4.05 and a standard deviation of 1.07. This indicates concerns about the accuracy and reliability of the records maintained by the immigration office, further contributing to user dissatisfaction.

Moreover, most of the respondents disagreed that the authority was sympathetic and reassuring when customers had problems, with a mean score of 3.11 and a standard deviation of 1.35. This suggests mixed experiences regarding customer support, with nearly half of the respondents feeling that the authority lacks empathy and reassurance. Lastly, more than half of respondents disagreed that the authority provided their services at the times promised, indicated by a mean score of 3.56 and a standard deviation of 1.18.

Degree of Responsiveness of e-Passport

The respondents were also asked to indicate the extent to which they agreed that the degree of responsiveness of e-passports had affected the satisfaction of Kilimanjaro region customers. Their responses were summarized using descriptive statistics in Table 5.

Table 5: Descriptive Analysis of Degree of Responsiveness of E-Passport

Statement	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. Whenever you face any sort of e-passport problem the employees help you resolve the problem.	13 (8.60%)	24 (15.90%)	30 (19.90%)	65 (43.00%)	19 (12.60%)	3.35	1.15
2. The Authority operates a regular and effective complaint-handling process.	5 (3.30%)	33 (21.90%)	37 (24.50%)	54 (35.80%)	22 (14.60%)	3.36	1.08
3. Authority's e-passport system responds promptly hence preventing transaction queues.	7 (4.60%)	25 (16.60%)	25 (16.60%)	36 (23.80%)	58 (38.40%)	3.75	1.26
4. The e-passport system is readily available online and can be accessed anytime.	13 (8.60%)	0 (0.00%)	23 (15.20%)	64 (42.40%)	51 (33.80%)	3.93	1.13

The findings in Table 5 reveal that majority of respondents disagreed that employees help resolve e-passport problems when they arise, reflected by a mean score of 3.35 and a standard deviation of 1.15. This indicates dissatisfaction with the support provided by employees, suggesting that customers often do not receive the help they need in a timely manner. Similarly, the majority of respondents disagreed that the authority operates a regular and effective complaint-handling process, as indicated by a mean score of 3.36 and a standard deviation of 1.08. This implies that the complaint-handling process is perceived as inadequate, further contributing to customer dissatisfaction.

Additionally, most of the respondents disagreed that the e-passport system responds promptly, preventing transaction queues, with a mean score of 3.75 and a standard deviation of 1.26. This suggests that the system's responsiveness is a serious issue in the Kilimanjaro region, leading to delays and queues that negatively impact user satisfaction. Moreover, majority of the respondents disagreed that the e-passport system was readily available online and could be accessed anytime, as reflected by a mean score of 3.93 and a standard deviation of 1.13. This indicates serious issues with the system's availability, further frustrating users who need to access services at their convenience.

Assurance

The respondents were in addition asked to indicate the extent of agreement with the statement that e-passport can build on trustworthy/Assurance. Table 6 shows descriptive statistics.

Table 6: Descriptive Statistics on Trustworthy/Assurance

Statement	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. E-passport system is dependable	11 (7.30%)	8 (5.30%)	15 (9.90%)	63 (41.70%)	128 (35.80%)	3.93	1.15
2. Employees at Kilimanjaro region Immigration office is quick and efficient in service delivery.	21 (13.90%)	13 (8.60%)	25 (16.60%)	52 (34.40%)	40 (26.50%)	3.51	1.34
3. The E-passport system in the Kilimanjaro region gets adequate support from the authorities.	12 (7.90%)	24 (15.90%)	17 (11.30%)	71 (47.00%)	32 (17.90%)	3.51	1.19
4. All employees at the Authority have strong knowledge to answer inquiries about the e-passport system and the operations	18 (11.90%)	17 (11.30%)	18 (11.90%)	77 (51.00%)	19 (13.90%)	3.44	1.21
5. Customers feel safe through the e-passport system.	31 (20.50%)	38 (25.20%)	27 (17.90%)	41 (27.20%)	14 (9.30%)	2.79	1.3

The descriptive statistics results in Table 6 shows that majority of respondents disagreed that the e-passport system is dependable, indicated by a mean score of 3.93 and a standard deviation of 1.15. This suggests there is lack of confidence in the system's reliability, which negatively impacts user trust and assurance. Additionally, most of the respondents disagreed that employees at the Kilimanjaro region immigration office are quick and efficient in service delivery, as reflected by a mean score of 3.51 and a standard deviation of 1.34. This points to issues with the efficiency of service delivery, further undermining customer trust. Similarly, a majority of respondents disagreed that the e-passport system in the Kilimanjaro region receives adequate support from the authority, indicated by a mean score of 3.51 and a

standard deviation of 1.19. This implies that users perceive a lack of institutional support for the e-passport system, affecting its overall effectiveness and reliability.

Furthermore, 64.9% of respondents disagreed that all employees at the authority have strong knowledge to answer inquiries about the e-passport system and its operations, with a mean score of 3.44 and a standard deviation of 1.21. This highlights a perceived deficiency in employee expertise, which is crucial for building trust and ensuring customer satisfaction. Conversely, only more than a third of respondents disagreed that customers feel safe through the e-passport system, which is reflected by a lower mean score of 2.79 and a standard deviation of 1.3.

Empathy from the Service Provider

The respondents were moreover asked to indicate the extent to which they agree that, empathy is generated from service providers due to by e-passport services. The responses are shown in Table 7.

Table 7: Descriptive Statistics on Empathy from Service Provider

Statement	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. Kilimanjaro region immigration officers give each customer individualized attention to sort issues related to e-passports.	10 (6.60%)	23 (15.20%)	23 (15.20%)	60 (39.70%)	35 (23.20%)	3.58	1.19
2. Immigration Employees at Kilimanjaro region respond politely, humbly, and friendly when you enquire about E-passport service.	16 (10.60%)	24 (15.90%)	25 (16.60%)	57 (37.70%)	29 (19.20%)	3.39	1.26
3. E-passport Systems operates at hours convenient to all customers.	14 (9.30%)	30 (19.90%)	19 (12.60%)	60 (39.70%)	34 (18.50%)	3.38	1.25

The results in Table 7 depicts that majority of respondents disagreed that Kilimanjaro region immigration officers give each customer individualized attention to sort issues related to e-passports, as reflected by a mean score of 3.58 and a standard deviation of 1.19. This suggests a lack of personalized service, indicating that many users feel their specific concerns are not adequately addressed. Similarly, the majority of respondents disagreed that immigration employees in the Kilimanjaro region respond politely, humbly, and friendly when inquiries about e-passport services are made, evidenced by a mean score of 3.39 and a standard deviation of 1.26. This implies that how employees interact with customers could be improved to foster a more empathetic and supportive environment.

Additionally, a majority of respondents disagreed that the e-passport system operates at hours convenient to all customers, as shown by a mean score of 3.38 and a standard deviation of 1.25. This points to the issues with the accessibility and convenience of the service hours, which could negatively impact customer satisfaction.

Tangibility

Finally, the respondents were asked to indicate the extent to which they agree that tangibility can provide an option for e-passport services' choice decision. Table 8 shows descriptive statistics on tangibility.

Table 8: Descriptive Statistics on Tangibility

Statement	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree	Mean	Std. Dev.
1. Kilimanjaro region Immigration office has all the necessary modern equipment (Modern data center, electronic payment system, communication equipment, and infrastructure)	16 (10.60%)	41 (27.20%)	28 (18.50%)	39 (25.80%)	27 (17.90%)	3.13	1.29
2. The E-passport System Menu and guidance on their website are clear and easily understood.	22 (14.60%)	25 (16.60%)	35 (23.20%)	31 (20.50%)	38 (25.20%)	3.25	1.38
3. The electronic passport System uses modern technology that can be accessed from any handheld and computing devices.	21 (13.90%)	28 (18.50%)	24 (15.90%)	49 (32.50%)	29 (19.20%)	3.25	1.34
4. Immigration Employees are smart such that attend to reported failed transactions and give guidance on time.	17 (11.30%)	32 (21.20%)	30 (19.90%)	48 (31.80%)	25 (15.90%)	3.2	1.26

The results indicate that the perceptions of the Kilimanjaro region Immigration office having all the necessary modern equipment were mixed, with a good number agreeing and others disagreeing, reflected by a mean score of 3.13 and a standard deviation of 1.29. This suggests that while some respondents recognize the presence of modern equipment, a significant portion feels otherwise, indicating a need for visible improvements or better communication about available resources. Regarding the clarity and ease of understanding of the e-passport system menu and guidance on their website, a third of respondents agreed, while most disagreed, resulting in a mean score of 3.25 and a standard deviation of 1.38. This implies that most of the users find the website difficult to navigate, indicating the importance of enhancing the user interface to improve clarity and ease of use.

Additionally, the perception of the e-passport system using modern technology accessible from any handheld and computing devices received a split response, with more than a third agreeing and most of them disagreeing, indicated by a mean score of 3.25 and a standard

deviation of 1.34. This suggests that many users do not feel the system is sufficiently modern or accessible, pointing to the need for technological upgrades and better accessibility features. Lastly, regarding the smartness and responsiveness of immigration employees in attending to failed transactions and providing guidance, more than a third agreed, while approximately half disagreed, resulting in a mean score of 3.2 and a standard deviation of 1.26. This indicates that most of the respondents are dissatisfied with the promptness and effectiveness of employee responses, suggesting improvements are needed in staff training and responsiveness. Enhancing these elements is expected to significantly influence customer satisfaction and their choice to use e-passport services in the Kilimanjaro region.

Additionally, during the interviews with key informants, the KIIs responded to various issues regarding the technical compatibility of the electronic passport system, including aspects like data format consistency and system integration, and how these affect customer satisfaction. One immigration officer observed that:

> *Internet problems and slow internet speeds frequently cause delays, which frustrates customers. Another officer noted that while the system's electronic integration of data, application, issuance, storage, and payment improves satisfaction by reducing the need for customers to repeatedly submit documents, technical issues such as system instability, network discrepancies, and misbehavior of system ports negatively impact the overall user experience (KII 1, 2024).*

Regarding the impact of factors like data transmission speed, data accuracy, and data processing time on customer satisfaction, an officer highlighted that:

> *Slow data transmission significantly affects customer satisfaction, emphasizing the need for faster internet services. Another officer pointed out that while data accuracy is generally good, leading to fewer errors unless the customer provides incorrect information initially, the slow processing times still diminish overall satisfaction. The officer suggested that the government should consider enhancing the fiber communication infrastructure to increase internet speed and improve the efficiency of e-passport services (KII 2, 2024).*

4.2.2 Regression Analysis Results

The study sought to establish the relationship between passport administration services in Kilimanjaro region and users' satisfaction. Multiple linear regression model was used and the results are shown in Table 9.

Table 9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.793a	0.629	0.615	0.48657

a. Predictors: (Constant), Application Process, Cost, Document Submission, Speed Time

Source: Field data, (2024)

The model fitness results in Table 9 indicate that the application process, cost, document submission, and speed time were satisfactory variables in explaining users' satisfaction with passport administration services in the Kilimanjaro region. This is supported by a coefficient of determination (R-square) of 0.629. This implies that the application process, cost, document submission, and speed time collectively explain 62.9% of the variations in users' satisfaction with passport administration services in the Kilimanjaro region. Table 10 shows the analysis of variance results.

Table 10: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.408	4	10.352	61.988	.000[b]
	Residual	24.385	146	.167		
	Total	65.794	150			

a. Dependent Variable: Users' Satisfaction

b. Predictors: (Constant), Application Process, Cost, Document Submission, Speed Time

Source: Field data, (2024)

The ANOVA results in Table 10 indicate that the general model was statistically significant, implying that the application process, cost, document submission, and speed time are good indicators of users' satisfaction with e-passport administration services in the Kilimanjaro region. The significance of the model is supported by an F statistic of 61.988, which is relatively high, pointing to a significant relationship between the independent variables and users' satisfaction. Additionally, the reported p-value is 0.000, which is less than the conventional probability significance level of 0.05. This further confirms that the model is statistically significant.

The regression coefficient results on the relationship between passport administration services in Kilimanjaro region (application process, cost, document submission, speed time) and users' satisfaction are presented in Table 11.

Table 11: Multiple Regression Coefficient Results

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.688	.254		2.707	.008
	Application Process	.184	.078	.208	2.368	.020
	Cost	-.047	.088	-.053	-2.830	.007
	Document Submission	.442	.101	.465	4.380	.000
	Speed Time	.155	.085	.164	2.820	.042

a. Dependent Variable: Users' Satisfaction

Source: Field data, (2024)

Table 11 shows that the application process and users' satisfaction were positively and significantly related (β = 0.208, p = 0.020 < 0.05). This implies that improvements in the application process are likely to enhance users' satisfaction with passport administration services in the Kilimanjaro region. The cost, on the other hand, was negatively and significantly related to users' satisfaction (β = -0.053, p = 0.007 < 0.05). This indicates that higher costs associated with passport services reduces users' satisfaction levels. Furthermore, document submission and users' satisfaction were positively and significantly related (β = 0.465, p = 0.000 < 0.05). This indicates that more efficient document submission processes significantly improve users' satisfaction. Moreover, speed time and users' satisfaction were positively and significantly related (β = 0.164, p = 0.042 < 0.05), suggesting that quicker processing times enhance users' satisfaction with passport services.

These results concur with existing literature on the importance of efficient service delivery and user-friendly processes in enhancing customer satisfaction. The findings support the theory that service quality and efficiency are important determinants of user satisfaction in public services. The study concludes that e-passport services significantly influence users' satisfaction in the Kilimanjaro region. The results are consistent with the conclusions made by Mwaipyana (2014), highlighting that while ICT infrastructures and presentations are present, they are not considered ideal for effective service delivery.

Table 12 shows the distribution of respondents who were either satisfied or dissatisfied with each variable (Application Process, Cost, Document Submission, and Speed Time) and their influence on customer satisfaction. Table 12 shows the distribution of respondents who were either satisfied or dissatisfied with each variable (Application Process, Cost, Document Submission, and Speed Time) and their influence on customer satisfaction.

Table 12: Satisfaction Levels

Variable	Satisfied		Not Satisfied		Influence on Customer Satisfaction
	f	%	f	%	
Application Process	112	74.2%	39	25.8%	Positive and Significant (β = 0.208, p = 0.020)
Cost	56	37.1%	95	62.9%	Negative and Significant (β = -0.053, p = 0.007)
Document Submission	126	83.4%	25	16.6%	Positive and Significant (β = 0.465, p = 0.000)
Speed Time	98	64.9%	53	35.1%	Positive and Significant (β = 0.164, p = 0.042)

Source: Field data, (2024)

The results in Table 12 depicts varying levels of satisfaction with different aspects of passport administration services in the Kilimanjaro region and their influence on overall customer satisfaction. The results show that the most respondents (74.2%) were satisfied with the application process, which was found to have a positive and significant influence on users' satisfaction (β = 0.208, p = 0.020). Conversely, a higher proportion of respondents (62.9%) were dissatisfied with the cost of passport services, and this variable negatively impacted users' satisfaction (β = -0.053, p = 0.007), indicating that the high cost was a deterrent to

satisfaction. Document submission, with the highest satisfaction rate of 83.4%, had a strong positive influence on satisfaction ($\beta = 0.465$, $p = 0.000$), indicating the importance of efficient documentation processes. Moreover, 64.9% of respondents expressed satisfaction with the speed of service, which also positively affected satisfaction ($\beta = 0.164$, $p = 0.042$). These results demonstrate that much as factors such as application process, document submission, and speed time enhance satisfaction, the cost of services remains a serious concern, negatively affecting overall user satisfaction.

5.1 Conclusion

This study concludes that customer satisfaction with electronic passport (e-passport) services in the Kilimanjaro region is significantly influenced by various socio-demographic factors. The high response rate and the predominance of younger, educated male respondents indicate that the feedback predominantly reflects the views and experiences of these groups. Therefore, any improvements or changes to the e-passport services should consider these demographic characteristics for better meet user expectations and needs.

The study further concludes that there are critical areas for improvement in the e-passport system's performance. The significant dissatisfaction with transaction success rates, processing time efficiency, and the need to visit immigration offices highlights the need for enhancements in these areas. Additionally, this study concludes that the reliability and responsiveness of e-passport services are vital to user satisfaction. Specific service quality dimensions such as tangible aspects, responsiveness, assurance, and empathy significantly influence customer satisfaction. Enhancing these aspects leads to higher satisfaction levels.

6.1 Recommendations

The Ministry of Home Affairs should prioritize improvements in transaction efficiency and system reliability. Most of the respondents reported inefficiencies in the e-passport system, including transaction failures, time delays, and inadequate minimization of visits to the immigration office. The Ministry should therefore invest in upgrading the technological infrastructure to enhance system reliability and reduce transaction failures. Streamlining the application and document submission processes will also contribute to increased efficiency and user satisfaction. Furthermore, implementing rigorous testing and quality assurance procedures will help ensure that the system performs consistently and meets user expectations.

Tanzania Immigration Department should strive to focus on improving the efficiency and reliability of its systems. Specifically, enhancing transaction success rates, reducing document submission, decentralization of printing citizen identification system should store all documents in the system to avoid double visiting, status feedback of application process to be viewed by users on the immigration website, the time required to complete transactions, and reducing the need for users to visit immigration offices physically should be prioritized. Implementing robust technical solutions and regular system updates can address these inefficiencies.

To the policymakers, the study suggests that government agencies overseeing e-passport services should establish clear standards and guidelines to enhance service delivery. Policies should mandate regular audits and assessments of the e-passport system to ensure compliance

with industry standards and interoperability. Furthermore, policies should be put in place to protect users' data and ensure secure payment processes. This will help build trust and confidence in the system. It is also recommended that policies encourage user feedback and participation in decision-making processes to ensure that the services are aligned with user needs and expectations. It is important for users to actively engage in providing constructive feedback.

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