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Assessment of Customers' Perceptions on the Convenience of Telephone-Based Self-Service Banking: Evidence from Nyegezi Ward, Mwanza, Tanzania

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Abstract *: The study investigates how telephone banking customers perceive the convenience of telephone based self-service banking in Tanzania. It explores how the convenience affects the usage and adoption of telephone banking services. The study adopted a quantitative research design; the data were collected through electronic and conventional structured questionnaires from 247 telephone banking customers. The respondents were selected through convenient and purposive sampling from agents in Nyegezi ward, Nyamagana District, Mwanza city. The research evaluated how suitable the agent environments were for telephone banking operations, the easiness for customers to find agents location and how customers felt comfortable during their transaction process. According to the findings, these elements had a major impact on customers perception on the convenience of using telephone-banking services. Also, the findings demonstrate how satisfied telephone-banking customers felt with the overall customer experience. The strategic placement of telephone-banking agents together with their flexible operational hours brought about greater acceptance of services by underserved communities. The study supports the Technology Acceptance Model, which highlights that perceived usefulness and perceived ease of use function as the main drivers for technology acceptance in developing countries. The policy framework requires infrastructure development, data security standards and digital literacy training programs to be implemented. Financial institutions should focus on establishing dependable agent networks, while they should enhance their infrastructure through site monitoring and continuous training for their agents. Also, to enhance technology adoption, it is important incorporating both infrastructural and contextual elements that affect emerging markets while providing practical solutions for improving telephone banking services and enhancing financial inclusion.*

Keywords: *Telephone Banking; Customer Perceptions; Convenience; Technology Acceptance Model; Infrastructure Development.*

I. Introduction

The banking industry has experienced major changes during the past few years because of technological progress, which aims to enhance customer experience through better access to services (Kurihara, 2008). Customers now prefer telephone-based self-service banking as a replacement for traditional banking procedures. Telephone banking usually allows them to make transactions and access services from any location. Telephone banking works appropriately in many regions of the world because financial institutions can use the upsurging rate of mobile phone usage to provide banking services (Danaa et al, 2016). Customers have different opinions about telephone banking because they perceive its convenience and usefulness in different ways. It is obvious that some users may find the banking technology highly beneficial, while others may experience technological or policy difficulties

(Ndungu, 2013). Currently, telephone banking has developed into an essential part of contemporary financial services, which operate in Mwanza.

The research investigates how customers perceive on the convenience of telephone banking self-service systems at their designated service stations. The research will assess how agent environments function by examining the three aspects, which include suitability of the agent's environments for telephone banking operations, the easiness for customers to find agents location and how customers felt comfortable during their transaction process. The research assesses whether the environment enables easiness for a telephone banking customer who is looking for the agent's location and if the location maximizes customer confidence and enables easy communication while providing continuous telephone banking service. The study identifies service free from discomfort, which the customer enjoys when the transaction environment and the whole process of conducting the transaction provide a comfortable transaction atmosphere to maintain credential confidentiality. If customers believe that nobody is observing their transaction activities, which include their cash deposits and cash withdrawals (Yang, 2018), which will result in their decreased comfort and security. Understanding these environmental factors is essential for service quality improvement because a suitable environment enhances users' ability to understand and operate the Technology Acceptance Model (TAM) system (Mugo, 2017). The financial institutions should attain monitoring capabilities for their agents while optimizing agent locations (Ahmad, 2015), for increased adoption and sustained use of telephone banking services in Mwanza.

Despite the heightened use of telephone banking service in Mwanza, little is known about the challenges that telephone banking customers encounter when they attempt to contact banking agents during their operations. The research explores how easily customers can find agents based on their geographic location, signage, operational hours, and customer ability to establish their required distance. The study aims to find all the obstacles that exist because most of agents usually handle different business tasks apart from banking business, which makes them perform telephone banking as secondary work. Customers who withdraw large amounts of money face a risk because their situation becomes publicly known, which leads to potential theft incidents (Muniu, 2015). The environment creates a risk of customer information confidentiality being compromised because there is no option for agents to keep customer information private while conducting telephone banking with customers who may not be trustworthy (Kennedy & Ndungu, 2013; Sharma, 2001). It is crucial to address this gap because accessibility of telephone banking directly affects their willingness to use the service. Insights from this study are crucial to organizations and supervision authorities for developing better ways to expand telephone-based agents through improved visibility, optimized placement, and effective communication.

Addressing the current knowledge gap is crucial because it will lead to better understanding of service reliability and service availability, which both people need to build trust and use the service regularly. The research results create recommendations that optimize operational processes to deliver services that meet customer requirements for uninterrupted service availability (Yang, 2018). The study investigated whether customers experience discomfort when they use self-service telephone-based banking operations that agents provide. The results of this study investigated whether customers are comfortable with the services of telephone-based banking. It was the aim of this study to find out if telephone-banking self-service options provide customers with a positive experience through their design and environment. The current research gap needs to be addressed because it helps discover which parts of self-service telephone banking need improvement to make it more user-friendly, secure, and trustworthy while reducing user stress (Kijang, 2018). The study aimed to determine whether people achieve better results through telephone banking services or customers believe telephone banking services are more convenient and increase their likelihood of continuing to use the services.

1.1 Literature Review

The banking sector around the world has undergone significant technical changes because of technological development, which includes the development of telephone banking services. In America and Europe, financial institutions have adopted telephone banking as a standard practice for delivering their services (Sharma, 2001). The European banking sector has received a boost from regulatory changes, which include the revised Payment Services Directive (PSD2) (Yang, 2018) that enables financial institutions to share customer data while customers gain more control over their information, resulting in better telephone banking services (European Commission, 2021). The people of these regions consider telephone banking to be a safe and convenient service because they possess strong financial knowledge and their region has developed solid infrastructure (Ahmad, 2015). In the United States, telephone banking serves as an essential customer service channel that enables users to perform cash withdrawals and cash deposits while accessing automated voice response systems and customer support and short-term loans and secure authentication (Kumar, 2024; Mohiuddin, 2014). These regions continue to face security problems that arise from cybersecurity threats and their need to follow regulatory requirements, which create obstacles for establishing trustworthy telephone banking systems (Yang, 2018).

The Southeast Asian and Indian regions experience a massive development in telephone-based banking services because their population extensively uses telephones to reach unbanked and underbanked people. The Indonesian, Philippine, and Indian governments use telephone banking services to provide financial access to rural communities that lack traditional banking services (Niu & Zhou, 2022; Valera, 2025; Dar & Ahmed, 2021.). Through governmental initiatives like Jan Dhan Yojana and the implementation of digital wallets and telephone banking systems in India achieved financial inclusion for millions of people who now conduct their transactions through phone calls (Kaakandikar et al., 2025). Inadequate digital literacy, cybersecurity attacks, and existing regulatory obstacles are the major challenges faced by the countries (Chawla & Joshi, 2021; Ferill et al., 2024). According to Esquivias et al. (2023) such challenges hinder the sustainable development of telephone banking services.

Australia demonstrates its status as an advanced financial market through its telephone banking system. Such system provides bank customers with an accessible, effective, and widely used banking service and networks. Australian banks deliver complete telephone banking services, which include automated voice responses and customer support helplines and digital channel access, while maintaining strong security measures (Talukder et al., 2014). The secure environment for telephone banking exists in Australia due to the fact that bank consumers trust the system and regulatory bodies oversee its operations. Traditional banking services face limitations in their availability to people living in sub-Saharan Africa because this region experiences both regulatory challenges and infrastructural difficulties (Mpofu & Mhlanga,2022). The mobile and telephone banking services that Vodacom launched as Tanzania M-Pesa and Safaricom introduced as M-Pesa in Kenya have shown that people can access financial services without needing traditional banking systems (Suri & Jack, 2022; Bekele, 2022). The banking systems establish their value through telephone banking systems, which enable financial access to people living in areas without banking facilities.

The telecommunication-based banking system in East African countries, including Tanzania, demonstrates its capacity to extend banking services to previously unserved populations. The telephone systems of Mix by Yas, Airtel Money, Halopesa and M-Pesa provide essential financial services to low-income rural people through their capabilities for making deposits, transferring funds, paying bills and accessing minor loans (Mbiti & Weil, 2016; Suri & Jack, 2022). The current situation of telephone banking in Tanzania encounters obstacles that emerge from existing rules and people who lack digital skills and areas without constant telephone banking services. The Tanzanian experience of telephone banking demonstrates that financial systems requiring universal access depend on two essential elements, including suitable policy and legal frameworks, and proper technology systems. The way people in different parts of East African countries adopt telephone banking systems shows how technology advancement, regulatory systems, and customer confidence create different patterns of usage for these services in financial transactions across the globe (Ngilagina, 2016).

1.2 Theoretical Literature

The study uses the Technology Acceptance Model (TAM) to examine how users perceive the convenience of telephone banking in Mwanza through its benefits and operational simplicity. The study investigates how customers assess telephone-based self-service banking through three criteria, which include agents' environment, the easiness to find an agent and free from discomfort by telephone banking customers. The study adopted TAM to demonstrate how telephone customers behave toward technology while they study their technological attitudes (Davis, 1985; Mugo, 2017). The framework enables the identification of essential factors that determine why customers choose to accept and utilize telephone banking services (Baptista & Oliveira, 2015). The outcomes in this study may assist stakeholders to create specific telephone banking methods for solving problems that hinder usage and adoption of telephone banking technology (Egala et al., 2021; Alnemer, 2022). It is the aim of this study to contribute to improvement of telephone banking acceptance and adoption in Mwanza through enhanced customer trust and service utilization. Such enhancements are crucial in creating more accessible and reliable financial systems for the telephone banking development.

It is important to assess the working environment of telephone banking agents for stakeholders to understand how this environment affects customer views about the service's convenience and utility (Alnemer, 2022; Banerjee & Sreejesh, 2022). The efficiency of telephone banking services improves through a space that combines professional design with qualified staff members and spaces that all customers can access. The service becomes less valuable to users when they experience frequent system outages and the service operates during insufficient hours. Customers need to see telephone banking services available at all times to understand their practical value, which helps them manage their financial matters when it suits them (Almaiah et al., 2022). Telephone banking customers who see the agents' working environment as suitable and safe may easily use and adopt the telephone banking service (Akhter et al., 2022). A working environment that maximizes safety and user trust while reducing mistakes and supporting easier communication will create higher product value perception, which leads customers to use the banking service. It is possible for customers to doubt the service value because the environment lacks both professional standards and trustworthy elements, which decreases their desire to use telephone banking services (Anouze & Alamro, 2020). The environment needs to establish its suitability because it creates customer perceptions about the service's benefits and practical applications in their daily lives.

The ability of customers to easily locate agents who handle telephone banking services directly impacts their assessment of how conveniently the technology operates. When agents can be found through a simple and direct process, it becomes easier for customers to obtain banking assistance, which results in better service delivery through enhanced user experience (Yang 2018). The customers can access the service with greater convenience because it allows them to save time, which results in a better overall service experience, thus demonstrating the service value as a useful financial tool (Ahmad, 2015). Customers will view the service as less effective when they experience problems with agent location, which results in extra service waiting times. Telephone banking customers may simply value the service if it is easy to use because it helps them complete banking transactions effortlessly. Customers need to locate telephone banking agents easily and conveniently because any difficultness may affect their perceptions of telephone banking services (Danaa et al, 2016; Kijang 2018).

The service being free from discomfort during the transaction of telephone banking services is another critical factor that affects how people perceive convenience in using telephone banking technology (Anouze & Alamro, 2020). Customers want the entire procedure that protects their information security to include details about deposited amounts together with their username and password information. Customers who experience smooth interactions without any inconsistent points will perceive the service as effective and valuable (Akhter et al., 2022). The self-service transaction process becomes easier for users to adopt when their experience with the process remains comfortable throughout. Customers experience better service efficiency when they encounter interactions that deliver them smooth and painless experiences. Customers who experience self-service transactions through a comfortable

process will experience less stress and frustration, which normally prevents them from adopting new technology. The system demonstrates its ability to deliver permanent telephone banking service through its continuous operation and keeping customers safe from inconveniences. Customers who handle banking through telephone services experience better service when they can use the system at all times because it shows them the system works properly and fulfills their needs (Banerjee & Sreejesh, 2022).

II. Methods and Materials

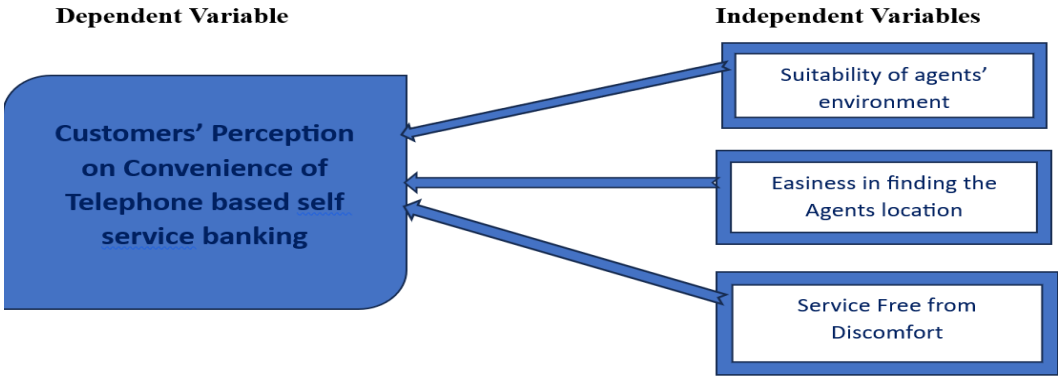
This study used a quantitative research design to assess the perceptions of bank customers of convenience of telephone-based self-service banking in Mwanza, Tanzania. The active telephone banking users in the region served as the target population for this study. The researchers applied the convenience random sampling technique to achieve demographic representation, which included age, gender and education level. A Cochran's formula was used to establish a sample size of 247 respondents, which ensured that the study results maintained statistical validity and reliability. Researchers collected data by using structured questionnaires, which they administered through electronic and physical methods to meet different digital literacy requirements. The questionnaire used Likert-scale items to assess customer perceptions on convenience of telephone-based self-service banking in Mwanza, Tanzania. Researcher pretested the questionnaire before data collection to verify its clarity and validity, and made necessary adjustments based on the results.

The researcher used descriptive statistical methods to analyze the data collected from the respondents who provided information about their demographic characteristics and their assessment of the telephone banking self-service system. The researcher used inferential statistical methods together with regression analysis to investigate how customers perceived the convenience of telephone-based self-service banking in relation to their assessment of the agents' operating environment and their ability to find agents' locations and receive service without any interruptions. The researcher conducted the analysis through SPSS software, which used to test statistical significance at the $p < 0.05$ threshold. The research process maintained ethical standards through the implementation of informed consent procedures and confidentiality protection measures. The methodology aimed at ensuring robustness, validity and reliability in determination of bank customers' perception on convenience of telephone-based self-service banking convenience in Mwanza.

2.1 Conceptualization of Study

The study uses a conceptual framework to investigate how customers view the convenience of telephone-based self-service banking through established relationships between independent and dependent variables. The independent variables represent the determinants of perceived convenience of telephone-based self-service banking and encompass the suitability of agents' environment for telephone banking operations, the easiness of finding agents' location for telephone banking services, and the service being free from discomfort during telephone banking transactions. The environmental factors of the study include all equipment and infrastructure elements together with all environmental distractions that create interruptions and the protection of private information during the transaction process. Environmental noises and distractions also play a crucial part, as there may be a clear understanding between a customer and the agent to avoid mistakes that will result in financial loss. The telephone banking service uses privacy and confidentiality to protect customer information, which includes passwords and account balance data, from man-in-the-middle cyber threats. The factors that make it easier to find agent locations depend on two elements, which are the presence of signage and posters and the dimensions of the signage and posters together with their presentation through different languages and colour schemes. The factors that lead to customers experiencing telephone banking services without discomfort include their experience with telephone banking services together with their experience with agent assistance, which leads to their overall satisfaction. The dependent variables of the study is the customers' perceptions about telephone-based self-service banking convenience.

Figure 1: Conceptual Framework



2.2 Analysis

The analysis of questionnaire data aimed to determine how customers perceive the convenience of telephone self-service banking. The researcher used descriptive statistics, which included frequencies and percentages, means and standard deviations, to display the demographic data of respondents together with their views about suitability of the agents' environment for telephone banking and their easiness to locate agents' location and their experience of free from discomfort with telephone banking operations. The study used inferential statistical methods to assess how independent variables related to the dependent variable. The researcher used regression analysis to assess how much each factor affected the probability of customers perception of the convenience when using telephone banking services. The researcher used SPSS version 26 and AMOS version 24 to perform all their data analyses. The researcher established statistical significance at a threshold of $p < 0.05$. The researcher conducted data normality and multicollinearity and missing value assessment before analysis to validate their data. The researcher conducted these analyses to determine which factors affected customers' perception on perception of telephone-based self-service banking in Mwanza.

2.3 Reliability and Validity Testing

The study results required reliability and validity assessment because it represented a critical step to establish accurate and trustworthy results. The measurement instrument shows reliability through its ability to deliver consistent results, which maintain stable performance across multiple testing instances. The measurement instrument shows validity when it delivers precise results of the specific attributes that the instrument intends to evaluate. The researcher conducted complete analyses of all Likert-scale items that were used in the study. The measurement tools proved their reliability and validity through the analysis process, which helped establish research findings as credible evidence. The measurement instrument needs these characteristics because they enable researcher to make precise and significant findings from collected research data.

Tab 1. Reliability and Validity Test Results (N = 247)

Test	Items Number	Cronbach's Alpha	Factor Loadings	AVE	CR	Interpretation
Environmental Factors	4	0.81	0.62 – 0.78	0.55	0.80	Good reliability, valid construct
Equipment and Infrastructure	3	0.79	0.64 – 0.82	0.57	0.82	Acceptable reliability, valid construct
Easiness in finding location	3	0.84	0.66 – 0.85	0.58	0.83	Good reliability, valid construct

Noises and distraction	3	0.87	0.70 – 0.88	0.65	0.89	High reliability, strong validity
Privacy and confidentiality	3	0.89	0.72 – 0.88	0.68	0.91	High reliability, strong validity
Overall Scale	16	0.91	0.62 – 0.88	—	—	Excellent reliability

2.3.1 Reliability analysis

This study adopted the Cronbach's Alpha method to evaluate its internal consistency. It verified all study constructs as reliable because their measurement values surpassed the 0.70 threshold. The five variables of environmental factors ($\alpha = 0.81$), equipment and infrastructure ($\alpha = 0.79$), easiness in finding agents' location ($\alpha = 0.84$), noises and distractions ($\alpha = 0.87$), and privacy and confidentiality ($\alpha = 0.89$) achieved good to high reliability scores according to the testing results. The complete scale, which included all 16 items, produced an alpha value of 0.91, thus demonstrating excellent internal consistency. The results showed that each construct item consistently measured the specific dimension of perceived convenience.

*2.3.2 **Validity Analysis***

This study adopted factor analysis to evaluate the construct validity of their study. The Kaiser-Meyer-Olkin (KMO) measurement of sampling adequacy reached 0.89, which shows excellent results, whereas Bartlett's Test of Sphericity proved significant (χ^2 (120) = 1450.32, $p < 0.001$), which established the data suitability for conducting factor analysis. The researcher used Exploratory Factor Analysis (EFA) with Principal Component Analysis and Varimax rotation, which produced five unique factors that matched the theoretical constructs. The items showed strong agreement with their corresponding constructs through factor loadings that ranged between 0.62 and 0.88. The total variance explained reached 72.4%. The researcher achieved convergent validity because all constructs showed Average Variance Extracted (AVE) values over 0.50 with a range that extended from 0.55 to 0.68, while the Composite Reliability (CR) values showed a range from 0.80 to 0.91, which exceeded the critical value of 0.70. The researcher established discriminant validity because each construct's square root of AVE exceeded its correlations with other constructs, which showed that each construct functioned independently from the others.

III. Results

3.1 Demographic Characteristics of Respondents

The descriptive analysis of 247 respondents reveals several notable demographic and perceptual trends regarding perception on convenience of telephone-based self-service banking. A majority of participants were young adults, with 66.8% falling between the ages of 20 and 39, underscoring the dominance of younger users in using telephone banking services. Gender distribution was relatively balanced, with males accounting for 50.6% and females 47.8%, while only 1.6% preferred not to disclose. Educational attainment was high, as 56.7% of respondents reported tertiary education, followed by 28.3% with secondary education, and 10.1% with postgraduate qualifications, suggesting that users are predominantly well-educated. Employment status indicated that 44.5% were employed, 26.3% self-employed, and 16.2% students, while unemployment and retirement accounted for smaller proportions. Income levels were largely middle-tier, with 60.7% identifying as middle-income earners, and residence patterns showed a strong urban concentration, with 72.9% living in urban areas compared to 27.1% in rural settings.

Table 2. Demographic Characteristics of Respondents (N = 247)

Characteristic	Category	Frequency (n)	Percentage (%)
Age	20–29	95	38.5
	30–39	70	28.3
	Other age groups	82	33.2
Gender	Male	125	50.6
	Female	118	47.8
	Prefer not to say	4	1.6
Education Level	Tertiary	140	56.7
	Secondary	70	28.3
	Postgraduate	25	10.1
	Primary/None	12	4.8
Employment	Employed	110	44.5
	Self-employed	65	26.3
	Student	40	16.2
	Unemployed/Retired	32	13.0
Employment	Employed	110	44.5
	Self-employed	65	26.3
	Student	40	16.2
	Unemployed/Retired	32	13.0
Income Level	Middle	150	60.7
	Low	70	28.3
	High	27	11.0
Residence	Urban	180	72.9
	Rural	67	27.1

3.2 Descriptive analysis results:

Table 3 Descriptive Results

Variable	Mean	Std Dev	Min	Max	Remarks
Customers perception of the convenience of telephone banking	4.2	0.8	2.5	5.0	Measured on a 5-point Likert scale; generally positive perception
Suitability of telephone banking agent environment	4.0	0.9	2.8	5.0	Customers find the environment mostly suitable
Easiness in finding telephone banking agents location	3.8	1.0	2.0	5.0	Moderate easiness reported; some find it is challenging
Service free from discomfort during transaction	4.1	0.7	3.0	5.0	High perception of discomfort free

The descriptive results on customers' perception on the convenience of telephone banking, reveal the Mean of 4.2, this mean indicates that, on average, customers perceive telephone banking as quite convenient, leaning towards agreement on a 5-point scale. Also, the standard deviation of 0.8 suggests moderate variability in perceptions; most customers agree that the service is convenient, but some have less favourable views. The results on customers perception with the range between 2.5 to 5.0 shows that while the majority perceive high convenience, a few respondents feel less satisfied, with perceptions as low as 2.5

Suitability of telephone banking agent's environment shows the mean 4.0 which reflects a generally positive view, with customers considering the environment suitable for banking activities. Furthermore,

the standard deviation 0.9 indicates some variation, with a few customers perceiving the environment as less suitable (closer to 2.8). The range (2.8 to 5.0) confirms that most find the environment appropriate, though some have reservations.

The results on the easiness in finding telephone banking agents' location provide the mean (3.8) that that suggests, on average, customers find it moderately easy to locate agents, but perceptions are slightly less positive compared to other variables. On the Standard deviation (1.0) the results indicate considerable variability, with some customers experiencing challenges (as low as 2.0). Moreover, the range (2.0 to 5.0) reveals that while some find it very easy, others find it quite difficult, highlighting inconsistency in location accessibility.

Service free from discomfort during transactions reveals the mean of 4.1, this mean demonstrates that, most customers perceive the service as largely free from discomfort. The standard deviation of 0.7 suggests high agreement among respondents, with little variation. Also, the range between 3.0 and 5.0 shows that even the least comfortable experiences are rated at least somewhat positive, with most perceiving little to no discomfort.

Therefore, according to these results customers generally view telephone banking positively across all variables, particularly regarding convenience and discomfort-free service. However, variability in perceptions of ease of finding agents indicates that location accessibility may be an area for improvement to enhance overall customer satisfaction.

3.3 Discussion of Descriptive Results

The descriptive analysis reveals that customers generally perceive telephone banking services positively across key dimensions. The high mean scores for perceived convenience (4.2) and service free from discomfort (4.1) suggest that customers are satisfied with the overall experience of telephone based self service banking. It is obvious that customers would like to perform telephone banking services without any interruptions from other people, these provide customers with comfortability during transaction. This indicates that the telephone banking platform is effectively meeting customer needs in terms of accessibility and comfort, which are critical factors for fostering customer loyalty and promoting continued use. The agents' performance is a good indicator to service providers performance.

It is expectation of the customer to get the agent with suitable environment for monetary dealings. The suitability of the agents' environment also scores favorably (mean of 4.0), implying that customers find the physical or virtual environment in which the agents operate appropriate and conducive to effective telephone banking service delivery. Some agents use just umbrella and benches to conduct telephone banking services, the setting of agents' location provide options when customer need the service for example a customer with huge amount to deposit or to withdraw would like the agent located the room with more privacy comparing to the customer with very small amount of money to deal with. This positive perception likely contributes to the overall perception of convenience, as a suitable environment can enhance service quality and customer trust.

However, the variable related to easiness in finding agents' location shows a slightly lower average score (3.8) with a higher standard deviation (1.0). This suggests that while many customers find it relatively straightforward to locate agents, a considerable proportion face challenges. This is due to the fact that the customer would want to be served by the right agent. The preferred quality of agent is agent with availability of cash, float and the one who can keep customers information in a confidential way. The wide range (2.0 to 5.0) indicates inconsistencies in accessibility, which could be a barrier to optimal customer experience. Customers who find it difficult to locate agents may experience frustration, potentially diminishing their overall satisfaction with the service.

The variability in responses highlights the importance of addressing location or accessibility issues. Improving signage, providing clearer directions, or implementing digital tools for locating agents could help mitigate these challenges. Some agents do not update their signage and posters when some changes occur, such as unavailability of some services, changes of company's name like from Tigo to Mix by Yas, also the posters language should consider users of different languages. Doing so may enhance perceived accessibility, thereby increasing overall customer satisfaction and perceptions of convenience.

3.4 Implications for Practice:

The implication from the descriptive results, focus on improving the ease of locating agents to ensure more consistent positive perceptions across all customer segments on the telephone banking usage. Another implication is on maintaining high standards in agent environment suitability and service comfort, as these factors significantly contribute to positive perceptions on convenience. Furthermore, there must be regularity in gathering customers' feedback to monitor these perceptions and identify evolving issues related to accessibility and comfort. The descriptive statistics indicate a strong positive perception on convenience of telephone banking services, with particular strengths in comfort and service environment. Addressing the variability in ease of locating agents could further enhance customer satisfaction and reinforce the telephone bank's reputation for accessible, comfortable, and convenient service delivery.

3.5 Inferential Statistical Results

Tab 4: Chi-Square Results

Variable	Chi-Square	P-value	Interpretation
Environment suitability (High versus Low) & Perception of Convenience.	12.34	0.006	Significant association; better environment perception linked to higher convenience perception.
Easy of finding location (Yes or No) & Perception of convenience	15.67	0.002	Significant association
Service free from discomfort (Yes or No) & Perception of convenience.	10.45	0.015	Significant association

The chi-square analysis demonstrates that essential environmental factors and operational elements of the service create significant effects on customers' perceptions of convenience of telephone-based self-service banking. The environmental suitability demonstrates a chi-square value of 12.34 with a p-value of 0.006, which indicates a statistically significant relationship because customers who find the environment more appropriate will consider the service more convenient. The results show that customers find it easy to reach the agent's location, which results in them experiencing better service delivery (Chi-Square = 15.67, p = 0.002) because customers need to reach the service points quickly. The research shows that customers need to experience no discomfort during all service interactions, which establishes a direct relationship to how they assess convenience (Chi-Square = 10.45, p = 0.015). The research findings demonstrate that environmental quality together with accessibility and comfort factors lead to different customer convenience perceptions, which supports the study conclusion that customers choose telephone banking services based on their assessment of infrastructure and environmental elements.

Tab 5: Summary of Regression Model

Metric	Value
R-squared	0.55
Adjusted R-squared	0.52
F-statistics	20.45
p-value (overall model)	<0.001

The regression analysis shows that the model explains perceived convenience in telephone banking with evidence 55 percent of the variability of customer perception on the convenience of telephone banking can be caused by the suitability of agent's environment, the easiness in finding agent's location and free from discomfort. The adjusted R-squared value of 0.52 shows the model maintains its strength after variable number control. The F-statistic value of 20.45 together with the p-value less than 0.001 shows that the model achieves high statistical significance while accurately representing the data. Customers perceive convenience through three main factors, which include environmental suitability and agent accessibility through easy location and service comfort. Each factor exerts a positive influence, which means that better infrastructure, easier access to agents, and more comfortable transactions will lead to better user experiences. The model demonstrates through statistical evidence that these predictors control customer satisfaction and service adoption, while convenience in telephone-based self-services banking depends on both operational efficiency and environmental quality.

Tab 6: Analysis of Variance

Source	Sum of Squares	df`	Mean Square	F	p-value
Regression	130	3	43.33	20.45	<0.001
Residual	107	147	0.73		
Total	237	150			

The ANOVA table shows that the regression model accounts for the complete variance of perceived convenience results because it received an F-value of 20.45 together with a p-value that falls below 0.001. The model shows a regression sum of squares equal to 130 that comes from three degrees of freedom, because the independent variables manage to explain a significant section of the measured variance. The model shows 107 residual sums of squares with 147 degrees of freedom, which demonstrates the model's missing explanation of data variability. The total sum of squares equals 237, which shows the complete variance of perceived convenience measurements. The prediction variables, which include environmental suitability, ease of locating agents, and discomfort-free service, all have major effects on how customers perceive products. The data demonstrates that the model successfully represents all main factors that determine people's perception of convenience during their use of telephone banking services in Tanzania.

Tab 7: Coefficient table

Predictor	B (Coefficient)	Std. Error	t	p-value	Interpretation
Intercept	2.1	0.3	7.00	<0.001	Baseline perception
Environment Suitability	0.45	0.08	5.63	<0.001	Positive impact on perceived convenience
Easy of locating agent	0.30	0.07	4.29	<0.001	Significantly increases perception of convenience
Service Comfort	0.25	0.09	2.78	<0.001	Positively related to perceived convenience

The coefficient analysis provides statistical evidence that environmental suitability and accessibility and service comfort all improve telephone banking convenience. The intercept value of 2.1 establishes the baseline perception of convenience when all predictors are absent, which provides the starting point

for interpretation. The strongest predictor effect originates from environmental suitability proves physical and contextual environment enhancements will improve customer perceptions. The accessibility measurement through agent location ease shows a meaningful impact, which includes a 0.30 coefficient that proves better access to agents will improve user experience. The service comfort coefficient of 0.25 shows that reducing transaction discomfort leads to better convenience perceptions. The results demonstrate that better environmental conditions, better accessibility, and better comfort lead to higher customer satisfaction and increased telephone banking service usage in Tanzania.

IV. Discussion

The findings of this study show essential factors that determine how customers perceive convenience when using telephone technology-based services in areas that lack proper infrastructure. The interpretation of the results within the context of the Technology Acceptance Model, which states that users need to perceive both system usability and system utility before they will start using a technological service. Customers in Tanzania perceive telephone banking as convenient because its system operates easily, while its environment and serviceability determine its value. Customers develop their service perception through both the operational elements and the entire environmental and experience aspects. According to the dimensions of TAM, users will accept telephone banking technologies based on their trust level and system access and service delivery standards, which establish their capacity to use financial services (Davis, 1985; Venkatesh & Bala, 2008).

The findings reveal that environmental suitability strongly affects the perception of telephone banking customers of convenience, thus reinforcing the importance of infrastructural quality in shaping customer experience. Daudi (2024) asserts that the usage of telephone banking in Tanzania depends on specific infrastructural conditions, while Diana et al. (2024) highlight that the environmental conditions in which telephone banking agents work create trust and enjoyment, leading to better digital banking convenience. The findings indicate of this study indicate that a supportive telephone banking environment enables customers to perceive the services as easy to use while also creating useful benefits, leading to the usage and adoption of the technology. Studies show that better environmental conditions lead to higher customer confidence, which creates customer satisfaction, which matches the positive results that occurred through telephone banking in Tanzania (Oliveira et al., 2016; Alalwan et al., 2017).

The findings of this study highlight that the ability to locate telephone banking affects how customers perceive the convenience of telephone banking. Customers of telephone banking usually value services that are easy to find and navigate because a fairly accessible service minimizes searching efforts while building customer trust. The study supports the findings of Rahaman et al. (2021) who assert that telephone banking requires both proper accessible point and customer friendly design for easy transactions. Similarly, Alalwan et al. (2017) highlighted that better accessibility of telephone banking transaction points results in easier product use, which decreases customer risk assessment. The existence of infrastructure problems in Tanzania requires telephone banking agents to establish accessible agent locations as their strategic approach for enhancing customer satisfaction. The findings demonstrate that accessibility functions as a fundamental element that determines how customers of telephone banking perceive technology usability as suggested by TAM. According to the model their perceptions usually affects both initial telephone banking adoption and ongoing usage.

Also, the findings unveil that customer service comfort that allows customers to complete transactions without experiencing any discomfort leads to better convenience. According to the findings, customers usually adopt and maintain their use of telephone banking services because comfort helps them overcome psychological obstacles, which increases their perceived serviceability of the system. Neves et al. (2023) underscores that the users of telephone banking experience greater enjoyment and trust when services operate without any discomfort. Kouladoum (2023) states that customers adopt telephone banking technology based on their evaluation of service quality, which includes comfort as an important factor. Banks need to create services that eliminate customer discomfort through three design elements:

ergonomic interfaces, clear communication, and reliable transaction systems. The interpretation of technology acceptance model extensions with hedonic and experiential elements, which technology acceptance model extensions show (Venkatesh & Davis, 2000).

The model demonstrates its strength through regression and ANOVA results. According to the findings environmental suitability combined with accessibility and service comfort can explain a major part of perceived convenience differences. Multiple factors must be studied together because they determine technology adoption according to TAM -based research that Venkatesh and Bala conducted in 2008 and Oliveira and Abdennebi conducted in 2023. Customers of telephone banking usually experience more convenience through improved telephone banking infrastructure and operational systems, which directly increases their usage of the service. The model shows statistical significance because its predictors directly affect customer perceptions, implying that service design and delivery should be approached through a comprehensive method.

The environmental factors show the greatest impact on the prediction model, while accessibility and service comfort provide lesser effects. The research results will guide banks in Tanzania to develop effective banking techniques. The banks can enhance customer convenience through environmental improvements together with better accessibility and improved service comfort, which will result in higher customer adoption rates and satisfaction levels. The model extends beyond its core elements by introducing environmental and comfort factors as additional elements that affect technology acceptance together with perceived ease of use and usefulness. The existing literature demonstrates that successful implementation of telephone banking requires three essential elements, which include high-quality infrastructure, proper accessibility, and satisfactory user experience (Oliveira et al., 2016; Alalwan et al., 2017; Abdennebi, 2023; Kouladoum, 2023; Neves et al., 2023). The combination of findings with TAM creates a complete framework that helps identify and enhance customer convenience perceptions while providing useful information for both theoretical understanding and practical implementation.

V. Conclusion

This study shows how Tanzanian customers perceive convenience when they use telephone self-service banking. The adoption of the service depends on three important dimensions, which include infrastructural quality, agent accessibility, and service comfort. Customers of telephone banking usually develop trust in technology through the combination of factors like reliable electricity and internet access in a supportive environment. All these dimensions support customers' ability to use technology according to the Technology Acceptance Model. Customers will continue to use products when the infrastructure and operational systems create a secure environment. The findings demonstrate that financial inclusion in mobile and telephone banking requires two essential strategies, which are upgrading physical infrastructure and maintaining proper service operations.

According to findings, making telephone banking services accessible to users determines how customers perceive their accessibility. Services that customers can easily find and use create faster service times while decreasing their effort and improving their overall contentment. The study results show that accessibility functions as a direct factor that determines how people perceive system usability, which represents a fundamental aspect of TAM. The placement of agents together with their extended service hours enables financial institutions to serve both rural and urban customers, thus providing access to financial services for those who currently lack it. Accessibility functions as a trust-building factor because customers tend to trust systems that they can see and access without difficulty. Financial institutions and banks should consider accessibility as an essential part of their service delivery system because modern customers expect services to be both technologically efficient and physically accessible.

Also, the findings unveil that service comfort had a significant impact on how customers perceived the convenience of telephone banking. The study emphasizes the need for companies to build transaction spaces that focus on their customers. The definition of comfort as the complete absence of any physical or psychological discomfort during financial transactions establishes a barrier that customers must overcome to judge the value of the product. Customers experience more satisfaction and trust when transactions are completed without inconveniences because the simple-to-use design with privacy protection features generated trustworthy service. The results indicate that banks need to spend money on ergonomic design systems to establish effective pathways for customer interaction while they create safe environments for financial transactions (Mugo 2017). Service comfort aligns with the pillars of TAM because users decide to adopt technology based on their experience with the product (Ngilagina 2016). Financial institutions offering telephone banking can achieve better service usage results by providing secure and pleasant customer experiences (Yang, 2018) that address comfort needs on telephone banking.

Digital financial services require both usable design and contextual readiness for successful implementation because convenience operates through multiple dimensions (Mugo, 2017; Kurihara, 2008). The combination of infrastructural development and strategic agent deployment together with user-centric service design will create maximum benefits for telephone banking, which will lead to inclusive financial development (Yang, 2018). The insights provide essential guidance to policymakers and financial institutions and telecommunication providers who aim to eliminate financial gaps while ensuring equal access to financial services. The research should explore the long-term effects within rural areas and underserved communities while developing methods that accommodate diverse socioeconomic contexts.

VI. Policy, Practical and Theoretical Implications

The study contributes significantly to both policy, practical and theoretical development. The evidence demonstrates to policymakers and regulators that they must improve internet access and electricity service in areas that lack these basic utilities. The establishment of these services creates the essential foundation that allows people to use telephone banking services without interruptions. The existing regulatory framework requires enhancements that will protect data privacy rights and ensure service security and consumer rights protection, because these elements establish consumer trust, which drives product adoption (BOT, 2017; BOT, 2021). The strategic placement of agents together with their extended operational hours will improve access to services, which helps to diminish the financial service gaps between urban and rural areas. The government should partner with telecommunication providers to create awareness programs that will teach digital skills to customers who need to master self-service banking operations. Financial institutions should focus on establishing reliable and accessible infrastructure, because this will enhance customer experience for their operations. The customer base will gain trust through the combination of three elements, which are the dedicated expansion of agent networks, the dedication to visible service points, and the implementation of backup power and connectivity systems. The combination of customer feedback systems and digital literacy training programs will strengthen the base of users for the system (Esselaar, 2001). The study results confirm the Technology Acceptance Model, which states that perceived usefulness and accessibility drive technology acceptance, while examining how infrastructure and service comfort level impact technology use (Schorrt, 2023). The research study provides a detailed explanation of how telephone banking customers in developing countries adopt technology while showing that environmental and experiential factors should be included in upcoming financial service adoption models.

VII. Limitations of Study and Areas for Future Research

The research shows its limitations that affected both the general application of results and the detailed investigation of its outcomes. The research design uses cross-sectional methods to study customer perceptions at one moment, which fails to identify shifting customer attitudes and technological progress. The research sample consists mainly of urban, educated, middle-income participants, cannot

extend its findings to rural populations and less-educated individuals who experience different obstacles. The results are based on participants self-reporting their data, which creates chances for response bias because participants tend to overstate their positive feelings about things to match social expectations while their actual memory of events remains incomplete. The study examines infrastructure and access elements as its main focus point with less investigation of cultural factors and digital literacy abilities and organizational rules. The research should follow two methods, which include studying participants across time and studying various groups who represent different backgrounds, particularly those who come from rural and underserved communities. The study of digital literacy training and trust-building measures and organizational innovations will create a complete understanding of factors that impact the adoption of telephone banking. Organizations that wish to improve their services should use qualitative methods because they discover hidden customer experiences and preferences through interviews and focus groups, which enable the development of specific solutions.

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