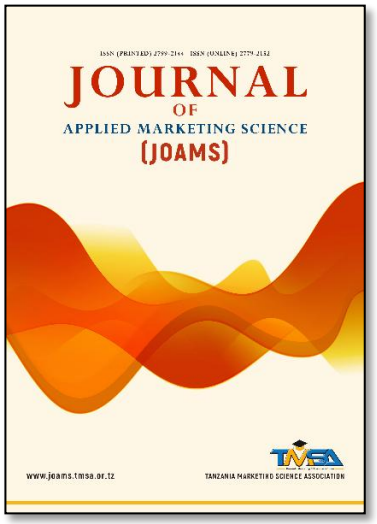


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Service Quality In Tanzanian Universities: Implications On Customer Satisfaction, Loyalty, And Students' Banking Accounts

Pius Paul[1], Isaac Kazungu[2], Alpha Mwongoso[3]

1 Moshi Co-operative University, Email: piuskpaul@gmail.com
2 Mosho Co-operative University, Email: isaackazungu@gmail.com,
3 Moshi Co-operative University, Email: lphamwongoso@gmail.com

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Service Quality In Tanzanian Universities: Implications On Customer Satisfaction, Loyalty, And Students' Banking Accounts

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Abstract

This study examines the influence of service quality dimensions on University students' satisfaction and loyalty toward their bank accounts in Tanzania. Using a causal research design and a cross-sectional survey, a sample of 398 students was selected through purposive, stratified and simple random sampling techniques. Data were analyzed using a Multiple Linear Regression (MLR) model. Results suggest that service quality significantly affects student satisfaction and loyalty, with responsiveness and empathy driving positive experiences. Low satisfaction can weaken the loyalty-service quality relationship, despite adequate service perceptions. To improve service quality, banks should prioritize personalized services, efficient issue resolution, and upgrades to physical and digital infrastructures, while training staff in responsiveness and empathy are recommended to enhance student experience and loyalty. The study offers practical implications into the service quality dimensions essential for fostering satisfaction and loyalty among higher education students, emphasizing the crucial moderating role of satisfaction in this relationship.

Keywords: Higher Learning Institutions; Service quality; Satisfaction; Loyalty; Students' bank account

Subjects: Higher Education; Quality Education; Service Marketing; and Management

1. Introduction

In recent decades, the banking industry has undergone a significant transformation due to globalization and technological advancements (Arya 2019). Service quality has become crucial for customer satisfaction and loyalty (Kimaita et al., 2023). To remain competitive and profitable, banks must prioritize exceptional service. The World Retail Banking Report 2024 highlights a decline in consumer trust, with 8% of customers switching banks this year, rising from 5% in 2018, and only 46% confident in their current bank. Key reasons for switching include high fees and poor service (Mamadiyarov et al., 2024). Research illustrates the ongoing challenge of maintaining consistent service quality, especially among student accounts in higher education institutions (Nguyen et al., 2020; Li, 2024).

The banking sector in Africa is rapidly growing, fueled by economic growth, increased financial inclusion, and technological advancements (Léon 2016). These developments reshape the financial landscape, presenting both opportunities and challenges. Despite improvements in banking services, countries like Ethiopia, Nigeria, and Kenya still face issues related to regulatory disparities and infrastructure (Beck et al., 2014). Service quality dimensions tangibles, assurance, responsiveness, reliability, and empathy are crucial for customer satisfaction and loyalty (Ofosu and Acquaye, 2020). These factors are vital for enhancing customer experience, particularly among the younger demographic, a key segment for future market growth.

In Tanzania, the banking sector has grown due to increased financial inclusion and accessible services (Gladson and Gideon, 2020). This has enhanced economic development and stability. However, banks must maintain strong customer relationships to protect their reputations, as satisfied clients are more likely to remain loyal and promote the institution. Despite the Bank of Tanzania's regulatory efforts, commercial bank performance is debated (Chititi, 2015). Challenges like inconsistent service quality and low financial literacy hinder efficiency (Nzowa et al., 2022), while infrastructural issues persist (Ndyeshobola and Etchebarne-Bourdin, 2022).

University Students represent a distinct market segment for banks, highlighting the necessity for improving their satisfaction to promote account retention after graduation. Additional research is crucial to understand how banks are meeting the unique needs of this demographic. By examining factors affecting service quality, satisfaction, and loyalty, financial institutions can enhance their services and retention strategies. This study aims to provide valuable insights for improving offerings and fostering long-term loyalty among university students, thereby benefiting the banking sector in Tanzania. Despite existing literature (Chikazhe et al., 2021; Gazi et al., 2021; Borishade et al., 2021), focused research on the academic community's banking needs is still lacking. While banks have implemented CRM systems to improve service delivery (Severine, 2020), targeted studies are essential to ensure student expectations are met, preventing dissatisfaction and disloyalty. This knowledge gap is vital in addressing students' unique banking requirements.

2. Literature Review

2.1 Customer satisfaction

Dam and Dam (2021) define customer satisfaction as the evaluation of products or services based on whether they meet or exceed client expectations. This subjective assessment involves comparing actual performance with anticipated outcomes. Marketing initiatives play a crucial role in shaping customer satisfaction throughout consumer behavior phases. Khan et al. (2022) emphasize that satisfaction arises when expectations are fulfilled, enhancing the emotional connection to a company. High customer satisfaction fosters loyalty, repeat business, and positive word-of-mouth, all vital for long-term success. Banks must prioritize service quality to retain customers and attract new ones (Tucker et al., 2020; Lian, 1994).

2.2 Customer loyalty

Khairawati (2020) emphasizes the act of repeated purchases from a specific company, indicating a steadfast commitment from customers despite the availability of alternative options. Vergaray *et al.*, (2023) define customer loyalty as a mindset that enhances a customer's preference for a particular supplier when acquiring specific services. It also refers to the degree to which

consumers adhere to a specific brand, good or service over time (Tegambwage & Kasoga, 2023). Customer loyalty is characterized by the tendency of consumers to consistently choose a company's products or services over those offered by competitors (Krishnan, 2021). This perspective emphasizes both the psychological and behavioral aspects of loyalty. On the psychological side, loyalty is rooted in attachment and preference for a brand or supplier, driven by emotional satisfaction and trust. Loyal customers encourage their friends and family to choose their service providers. Those who are dedicated to a particular bank favor it above all others in the banking industry (Tegambwage and Kasoga, 2024). Additionally, Zeithaml et al. (1990) illustrate that loyal behavior motivates customers to engage in more transactions with a service provider in the future

2.3 Student Bank account

A bank account is a financial product offered by banks to customers, allowing for deposits and withdrawals as needed (Dubina et al., 2020). It acts as a secure location for money storage while granting access to various banking services, enabling users to manage everyday expenses and receive funds easily. Essential for effective financial management, bank accounts ensure the safety of money and facilitate transactions like bill payments and money transfers, often providing interest on deposits (Auer et al., 2021). Moreover, they offer access to financial services such as loans and online banking, while serving as a reliable record for budgeting. Student bank accounts cater specifically to college and university students (Motlhabane, 2017), addressing their unique financial needs with potential benefits like lower fees and monthly charges.

2.4 Gap Theory

The theory introduced by Parasuraman, Valarie Zeithaml, and Leonard Berry in 1988 serves as a framework for evaluating service quality by identifying gaps between customer expectations and service performance perceptions. It highlights five specific gaps: Knowledge, Policy, Delivery, Communication, and Perception gaps. According to Alsaffar (2020), if these gaps go unaddressed, they result in customer dissatisfaction. The major advantage of this theory is its structured approach, aiding organizations in improving service quality (Riada Marenny Pasaribu, 2022). However, its primary focus on the expectation-perception gap oversimplifies service quality complexities, as noted by Zygiaris et al. (2022), indicating the need for a broader perspective that incorporates additional factors for a more complete enhancement of service quality.

2.5 Service Quality Model (SERVQUAL)

The SERVQUAL model measures service quality by comparing customer expectations with their perceptions of the actual service received (Chandra et al., 2019). Developed by Parasuraman et al. (1988), it defines service quality as how well a service meets or exceeds customer expectations, influencing satisfaction and loyalty in service industries. This study applies the SERVQUAL model to assess banking services for students in Tanzania, identifying gaps in service quality to enhance customer satisfaction and loyalty. It outlines five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. While valuable, the model assumes uniform relevance of dimensions across industries and may not fully address changing customer expectations (Machmud & Wolok, 2020; Golrizgashti et al., 2020; Mwongoso et al., 2015).

2.4 Hypotheses development

In higher learning institutions, understanding the relationship between service quality, student satisfaction, and loyalty to banks is crucial. Students perceiving high-quality banking services tend to be more satisfied, fostering loyalty. Key dimensions of service quality (i.e. reliability, responsiveness, assurance, empathy, and tangibles) significantly influence students' satisfaction with their banking services. High-quality service in these areas helps students feel valued and supported in managing their finances. For instance, responsive service enhances trust, while reliable service reduces access disruptions. Thus, improving service quality meets students' banking needs and strengthens their overall satisfaction with the institution, leading to loyalty. It is from these premises that, we hypothesize that:

> **H_1:** The service quality dimensions have a significant impact on the overall satisfaction of students in Universities with their bank accounts.

The relationship between service quality dimensions and student loyalty in higher learning institutions, particularly concerning their bank accounts, is a compelling area of debate. The dimensions of service quality can significantly shape students' perceptions and experiences which builds their brand loyalty. For instance, reliable banking services that consistently meet student needs could foster greater loyalty. Conversely, a lack of responsiveness in addressing student inquiries may lead to dissatisfaction and diminished loyalty. Additionally, the assurance of security and trustworthiness in managing their finances can greatly enhance students' emotional connection with their banking institutions. This therefore suggests that when banks prioritize high-quality service tailored to students, they are likely to cultivate a loyal customer base that remains engaged throughout their academic journey. This study therefore hypothesized that:

> **H_2:** The service quality dimensions have a significant influence on the loyalty of students in Universities with respect to their bank accounts.

High service quality, characterized by reliable account management, supportive customer service, and accessible banking products, fosters a positive experience for students. This positive experience, in turn, enhances their satisfaction levels, which leads to stronger loyalty towards their bank accounts. When students perceive the bank's services to meet or exceed their expectations, their overall satisfaction increases, reinforcing their commitment and loyalty to the bank. Thus, improving service quality is essential not only for elevating satisfaction but also for cultivating long-term relationships with students, ultimately ensuring their continued use of banking services throughout their academic journeys. Satisfaction mediates the relationship between service quality and the loyalty of students in Universities with their bank accounts" highlights the critical role of customer satisfaction as an intermediary factor. Thus it is hypothesized that:

> **H_3**: Satisfaction mediates the relationship between service quality and the loyalty of students in Universities with their bank accounts.

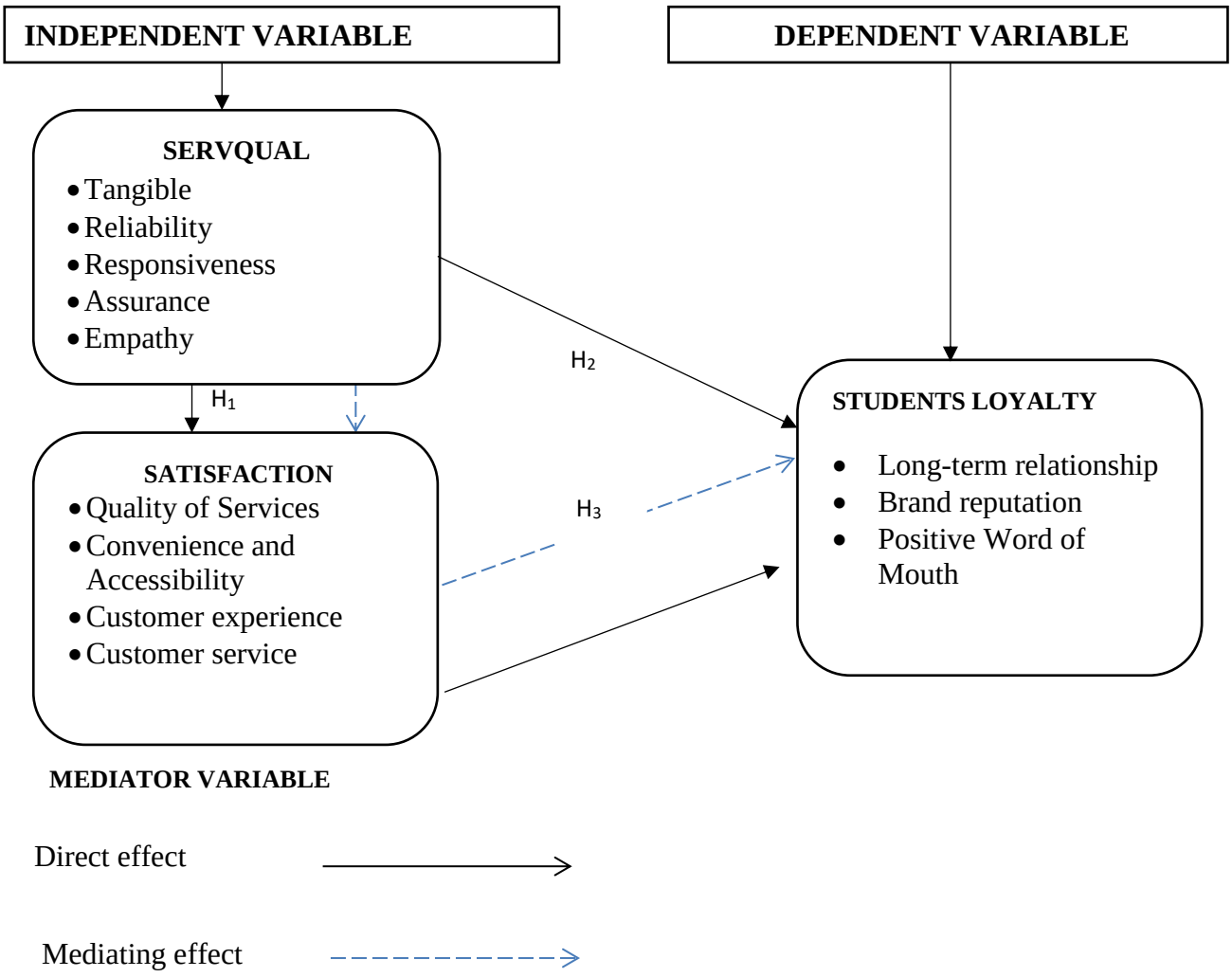


Figure 1: Conceptual framework

3. Research Methodology

This study utilizes a pragmatist research philosophy, emphasizing practical solutions while integrating both qualitative and quantitative methodologies, following a causal design and cross-sectional approach. The target population consisted of 17,490 students with active bank accounts. Data was collected from 391 students across four universities: Moshi Co-operative University (MoCU), Kilimanjaro Christian Medical University College (KCMU-Co), and Mwenge Catholic University (MWECAU) in Kilimanjaro, Tanzania (refer to Table 1). A mix of probability and non-probability sampling was employed to ensure relevant data collection, with purposive sampling targeting students with bank accounts and stratified sampling categorizing participants by educational levels (Certificate, Diploma, Degree, Master's). Random selection from each stratum ensured representative perspectives on service quality, satisfaction, and loyalty, with simple random sampling providing equal selection opportunities for all participants, as noted by Javed and Irfan (2020).

Table 1: Sample size distribution

University Name	Population	Proportion	Sample size
MoCU	9,000	9,000/17,490*391	201
KCMUCo	2,640	2,640/17,490*391	59
MWECAU	5,850	5,850/17,490*391	131
Total	**17,490**		**391**

The study used a structured questionnaire with items on service quality dimensions, student satisfaction, and student loyalty. Service quality was evaluated using a 5-point Likert scale covering responsiveness, reliability, tangibility, empathy, and assurance. Student satisfaction focused on transaction accuracy, ATM convenience, and online services, while loyalty was assessed through intentions to continue banking, recommend the institution, and overall trust. Pre-testing on 39 students from the Institute of Accountancy Arusha ensured clarity and reliability, achieving a Cronbach's alpha over 0.7. A Multiple Linear Regression (MLR) model analyzed the relationships between these variables, allowing for a nuanced understanding of their individual impacts.

4. Results and Discussions

4.1 Descriptive Analysis

The study adopted a mean score index based on the works of Kazungu (2020) and Linyiru (2015). It classified mean values: scores between 1 and 1.5 indicated no extent, 1.5 to 2.5 indicated a slight extent, 2.5 to 3.5 indicated a moderate extent, 3.5 to 4.5 indicated a greater extent, and values above 4.5 signified a very greater extent. According to the results in Table 2, a mean of 2.55 reflects a moderate agreement regarding the bank's physical facilities quality, suggesting students generally view the facilities positively. The standard deviation of 1.438 shows significant variability in responses, indicating that perceptions vary widely. While some respondents may disagree, the overall sentiment leans slightly negative, highlighting the need for banks to enhance the aesthetic appeal and accessibility of their facilities, such as branch appearance and ATM quality. A well-maintained physical facilities is essential for fostering positive customer perceptions, as noted by Gisare (2018). Kimaita et al. (2023) emphasize that such facilities contribute to a welcoming atmosphere that promotes customer loyalty and satisfaction.

Regarding the use of up-to-date technology by Banks, findings in Table 2 indicate a mean score of 3.03 for the corresponding dimension, suggesting that customer opinions reflect a moderate level of satisfaction regarding the bank's implementation of modern technology. However, the relatively moderate standard deviation of 1.323 highlights that responses vary, with some customers feeling dissatisfied and others satisfied, but the spread is not extreme. Banks should, therefore, focus on enhancing their digital services to meet the evolving expectations of the academic context. This is supported by Cavus *et al.*, (2021) and Mesay and Biruk (2018) who suggests that, banks should invest in up-to-date technology, especially online banking platforms and mobile apps to strengthen customer experience. These up-to-date technologies are user-friendly, secure, and offer a seamless experience, helping customers manage their accounts, transfer funds, and access other services anytime, anywhere.

Promotional materials received a mean score of 2.77, as indicated in Table II, suggesting

moderate customer agreement with the bank's usage. The standard deviation of 1.247 shows variability in satisfaction, indicating mixed feelings among customers about their awareness. Banks should reconsider their marketing strategies to better engage students and improve their satisfaction and perception of service quality. Rahmayati (2021) highlights that clear promotional materials communicate product benefits effectively. Using diverse channels, including social media, can enhance reach and engagement.

Service at promised time received a mean score of 2.96 in Table 2, indicating moderate customer satisfaction with the bank's service delivery. The standard deviation of 1.286 shows some variability in customer opinions, with a notable number of students expressing dissatisfaction. To improve satisfaction, banks should focus on enhancing dependability and ensuring timely service delivery. By addressing these issues, banks can build client trust and loyalty among students. Responsiveness employees' willingness to assist and provide prompt service is crucial in this context (Sugiarto and Octaviana 2021). A study by Mesay and Biruk (2018) suggested that a substantial number of customers believe commercial banks deliver services as promised, highlighting that consistent service builds customer confidence. Thus, meeting customer expectations enhances the bank's credibility and reinforces its reliability in the financial sector.

Accuracy of transaction has a mean score of 2.91, as shown in Table 2, reflecting moderate customer perceptions of the bank's reliability. This reflects mixed satisfaction regarding transaction accuracy, with a standard deviation of 1.320 demonstrating variability in responses. Many students question the bank's ability to maintain accurate records. To improve, banks should enhance their transaction processes. Increased accuracy can boost customer satisfaction and trust. Sophie (2019) suggests using specialized software to monitor transactions and detect unusual activity by analyzing real-time data against patterns. Such measures can block suspicious transactions, reducing fraud and enhancing customer trust in the bank’s services.

Findings in Table 2 show a mean score of 2.96 for "Error-free services," indicating that customers have a moderate view of the bank's ability to provide accurate services. This suggests a blend of satisfaction and dissatisfaction, reflecting a balanced perception of service quality. With a standard deviation of 1.269, there is moderate variability in responses, indicating that while some customers feel confident, others have faced issues. Banks need to focus on delivering error-free services to enhance customer satisfaction. Addressing these issues can build trust and loyalty among student customers. Mesay and Biruk (2018) noted that the Commercial Bank's focus on error-free service boosts customer trust and operational efficiency. Conversely, Fida et al. (2020) found that high accuracy in services helps ensure correct handling of transactions, reinforcing customer trust.

Customer complaints resolution is indicated by a mean score of 2.94 in Table 2, reflecting moderate customer sentiment. This score reflects a balance between satisfaction and dissatisfaction regarding the bank's handling of complaints. With a standard deviation of 1.252, there is moderate variability in the responses, suggesting that while some customers are content with their complaint resolutions, others are not, though the disparity in views is not significant. Many students appear to be only partially satisfied with how the bank resolves complaints. To boost student satisfaction, banks need to enhance their

complaint handling processes, ensuring timely and effective responses. Focusing on this aspect of service quality can significantly improve students' overall banking experience and foster greater loyalty to the institution. One participant mentioned during the interview that:

> *…In today's market, customers expect swift resolutions to their issues, so the bank must respond promptly to inquiries. There are times when response times can be delayed, and the level of detail in responses may vary. The bank is making efforts to keep customers informed and engaged, but there is potential for improvement in both speed and consistency. By enhancing communication consistency and responsiveness, the bank can build stronger customer trust and satisfaction… (Field interview, 2024).*

To support this, a study by Shams et al. (2020) indicates that timely complaint resolution positively affects consumer satisfaction and reputation. Kimaita et al. (2023) recommend that service providers enhance customer interaction training to ensure effective responses to inquiries. Similarly, Mesay and Biruk (2018) found that 50.7% of respondents received prompt service from the Commercial Bank, showcasing its commitment to efficiency and customer satisfaction. By minimizing wait times and quickly addressing customer needs, the bank improves the overall banking experience and reinforces its reputation for responsiveness.

The "Willingness of bank employees to provide support" has a mean score of 2.92, as shown in Table 2, indicating a moderate level of satisfaction among customers. The standard deviation of 1.413 suggests variability in experiences, with some customers feeling supported while others do not. Syed et al. (2023) recommend that banks focus on enhancing customer service skills among staff to improve overall satisfaction. Similarly, a study by Mesay and Biruk (2018) found that 40.1% of respondents agree that employees at the Commercial Bank respond promptly to inquiries, reinforcing customer trust.

Table 2 reveals a mean score of 2.89 for "Quickly resolve problems," indicating that customers have a neutral opinion about the bank's responsiveness to issues. The standard deviation of 1.318 shows variability in responses, suggesting a divide in customer satisfaction regarding problem resolution speed. Many students appear to lack confidence in the bank's ability to address issues promptly, highlighting the need for banks to improve their resolution processes. This improvement could enhance overall customer experience, fostering greater satisfaction and loyalty, despite findings from Mesay and Biruk (2018) showing that 44.9% of respondents feel confident in employee behavior at the Commercial Bank, which may vary due to inconsistent service and communication.

Confidence in the financial services provided by the bank is reflected in the findings of Table 2, which show a mean score of 3.03 for customer agreement on this statement, indicating a moderate level of assurance among customers. The standard deviation of 1.330 shows variability in responses, suggesting that while some customers express confidence, others may harbor doubts. This variability points to a significant range of opinions on the bank's financial services, indicating that improving overall client confidence may require changes from the bank. During the interview, one participant suggested that:

> *…Customers gain confidence in a bank's financial services when they*

notice reliability, transparency, and a solid reputation. Trust emerges from consistent service, clear communication of products, and stability. The professionalism and knowledge of staff further boost this confidence. Additionally, personalized services addressing individual needs and prompt issue resolution reinforce the feelings of trust and reliability… (Field interview, 2024).

To support this, Li et al. (2021) emphasized that a bank's capacity to foster confidence in its financial services is significantly influenced by various essential factors. Quality service, strong security protocols, and innovative technologies, such as cloud services, are critical components. Moreover, educating customers and prioritizing their needs are vital as well. Collectively, these aspects contribute to a favorable banking experience that boosts customer trust and satisfaction, ultimately reinforcing their confidence in the bank.

Findings in Table 2 show a mean score of 2.91 for "Behavior of bank employees," indicating customers have a moderate opinion on staff conduct, reflecting a balance of satisfaction and dissatisfaction. The standard deviation of 1.299 suggests varied experiences among customers, pointing to inconsistent practices or differing expectations. The bank should focus on enhancing employee interactions. In contrast, Fida et al. (2020) report customer satisfaction with complaint handling (mean rating 3.80) and staff promptness, appreciated for addressing issues even after hours (rating 3.75).

Customer trust in their bank's ability to handle their demands scored a mean of 3.05, indicating a moderate extent in terms of perception among customers, as shown in Table 2. The standard deviation of 1.340 reflects moderate variability in trust levels. This suggests that while some customers have strong trust, others do not, presenting an opportunity for the bank to enhance its commitment to security and efficacy. Improving transparency, addressing issues, and maintaining high service standards can foster a positive impression. Hidayat and Idrus (2023) emphasize the need for personalized, proactive engagement to further enhance customer trust.

Personalized services received a mean score of 2.92, suggesting a moderate customer opinion regarding the bank's service level, which reflects mixed feelings about its effectiveness in addressing individual needs. With a standard deviation of 1.329, responses vary moderately, suggesting that some customers appreciate personalized service while others do not. This presents an opportunity for improvement, as the bank may need to better understand customer financial needs. Haryono et al. (2023) emphasize the importance of clear communication and staff training to enhance empathy, while Mesay and Biruk (2018) note that a high client volume can hinder personalized attention.

Caring service received a mean score of 3.03 in Table 2, reflecting a moderate extent in perception among customers regarding the bank's level of care. The standard deviation of 1.284 shows moderate variability, suggesting mixed feelings about the service quality. To address this, the bank should enhance customer interaction protocols and training to ensure a consistently caring approach, which could boost overall satisfaction. Gisare (2018) recommends that the bank prioritize personalized services and train staff to be attentive to customer needs, possibly by implementing a customer relationship management system to track preferences.

The "convenience of bank operating hours" shows a mean score of 3.01, as indicated in Table 2, suggesting that customer perceptions are moderate and indicate varying levels of satisfaction. The standard deviation of 1.366 reveals moderate variability in responses, suggesting some customers find the hours convenient, while others do not. This inconsistency presents an opportunity for the bank to reconsider its operating hours to better accommodate student clients. In contrast, Fida et al. (2020) found that the bank offers call center services beyond regular hours, enhancing customer convenience and ensuring prompt complaint resolution.

Table 2: Descriptive statistics

Variable	Mean	Standard Deviation
Physical facilities of the bank	2.55	1.438
Up-to-date technology	3.03	1.323
Promotional materials	2.77	1.247
Service at promised time.	2.96	1.286
Accuracy of transaction	2.91	1.320
Error-free services	2.96	1.269
Customer complaints	2.94	1.252
Willingness of employees	2.92	1.413
Quickly resolves problems	2.89	1.318
Confident in the financial services.	3.03	1.330
Behavior of bank employees	2.91	1.299
Customer trust	3.05	1.340
Personalized service	2.92	1.329
Caring service	3.03	1.284
Convenient of bank operating hours	3.01	1.366

4.2 Test of hypotheses

The hypothesis testing (see Table 3) shows that service quality dimensions have a significant impact on the overall satisfaction of students in Universities with their bank accounts [p=<0.05]. Therefore, H_1 is accepted, and it is concluded that service quality dimensions do indeed have a significant impact on the overall satisfaction of University students' bank accounts. The hypothesis is supported by the results of the study, which align with findings from previous research by Kimaita *et al*., (2023) and Fida *et al*., (2020), both of which confirm that tangible and other key determinants of service quality significantly influence student and customer satisfaction.

Table 3: Regression Coefficients for service quality dimensions and overall satisfaction

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	0.342	0.077		4.463	0.000
Tangible	0.254	0.034	0.297	7.447	0.000
Reliability	0.115	0.036	0.123	3.163	0.002
Responsiveness	0.196	0.035	0.224	5.542	0.000
Assurance	0.114	0.036	0.127	3.158	0.002
Empathy	0.208	0.034	0.236	6.119	0.000

Results in Table 4 indicate that service quality dimensions have a significant influence on the loyalty of students in universities concerning their bank accounts [p=<0.05]. Thus, H_2 is accepted, and it is concluded that the combined effect of the service quality dimensions (tangibility, responsiveness, assurance, and empathy) significantly influences University student loyalty towards their bank accounts. This is supported by Borishade *et al*., (2021) who found that service quality are associated with corresponding changes in loyalty, means that the quality of services plays a crucial role in determining customer loyalty. Teeroovengadum (2022) revealed that customer satisfaction directly enhances customer loyalty, as satisfied customers are more likely to continue using the bank's services and recommend them to others. When customers feel their needs are consistently met, they develop a stronger attachment to the brand.

Table 4: Regression Coefficient for service quality dimensions and students' loyalty

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	Beta		
(Constant)	0.585	0.070		8.306	0.000
Tangible	0.237	0.044	0.250	5.416	0.000
Reliability	0.036	0.047	0.035	0.777	0.438
Responsiveness	0.255	0.045	0.264	5.625	0.000
Assurance	0.152	0.046	0.153	3.277	0.001
Empathy	0.242	0.044	0.248	5.551	0.000

The results of the mediator analysis show that satisfaction moderates the relationship between service quality and the loyalty of students at selected Universities to their bank accounts. The conclusion regarding the research hypothesis (H_3) is that satisfaction significantly moderates the relationship between service quality and the loyalty of students to their bank accounts at selected higher learning institutions. The results confirm that satisfaction enhances the positive effect of service quality on student loyalty, with a p-value less than 0.05, indicating statistical significance. This finding is consistent with the study by Borishade *et al*., (2021), which concluded that when services meet customers' needs, satisfaction increases loyalty. Therefore, H_3 is accepted.

4.3 Mediation effect

In this model, service quality (X) was the predictor variable, student loyalty (Y) was the outcome variable, and satisfaction (W) act as the moderator. The interaction term (X*W) between service quality and satisfaction was included in the model to assess the moderation effect. The model expressed as: $Y = b_0 + b_1X + b_2W + b_3(XW) + e$, where b_0 is the intercept, b_1 is the effect of service quality, b_2 is the effect of satisfaction, b_3 is the interaction effect of service quality and satisfaction, and e represents the error term.

Table 5: Model Summary for mediation effect

R	R-sq	MSE	F	df1	Df2	P-value
0.858	0.737	0.292	367.620	3.000	394.000	0.000

The constant in the regression equation (2.803, p = 0.000) indicates the expected level of student loyalty when service quality and customer satisfaction are zero, signifying a baseline level of loyalty (Alita et al., 2021). The positive coefficient for service quality (0.469) suggests a significant relationship with loyalty, while customer satisfaction (0.497) also shows a strong positive association with increased loyalty. Additionally, the interaction term (0.088, p = 0.011) indicates that higher customer satisfaction strengthens the impact of service quality on loyalty. Thus, banks should prioritize both service quality and customer satisfaction to enhance student loyalty effectively.

4.3 Test of higher-order unconditional

The test of the highest-order unconditional interaction reveals that the interaction between service quality (SERVQUA) and customer satisfaction (Custsat) has a statistically significant effect on the outcome variable. The change in R^2 due to this interaction is 0.004, indicating that while the effect is small, it is meaningful within the context of the model. The F-statistic for the interaction is 6.487, leading to a p-value of 0.011. This p-value is below the conventional threshold of 0.05, confirming that the interaction between service quality and customer satisfaction significantly contributes to the model (Table 6).

Table 6: Regression Coefficient for mediation effect

	Coef	SE	t-statistic	P-value	LLCI	ULCT
Constant	2.803	0.038	74.050	0.000	2.728	2.877
SERVQUAL	0.469	0.061	7.740	0.000	0.350	0.589
Custsati	0.497	0.059	8.388	0.000	0.381	0.614
Int	0.088	0.034	2.547	0.011	0.020	0.155

4.4 Theoretical contributions

This study contributes to the current body of literature by examining the mediating role of satisfaction in the relationship between service quality and loyalty, particularly within Universities in Kilimanjaro, Tanzania. While earlier studies, such as those conducted by Parasuraman et al. (1988), focus on the direct link between service quality and loyalty, this research extends that perspective by emphasizing the mediating influence of satisfaction. It contrasts with previous findings by showing that even high service quality does not guarantee loyalty when satisfaction levels are low. The study also adds the specific effects of individual dimensions of service quality, such as responsiveness and empathy, on loyalty, which differs from other research that treats service quality as a single, uniform entity. This theoretical distinction offers a more detailed understanding of how these variables interact.

4.5 Practical Implication of the Study

The findings highlight practical implications for banks serving students in higher education.

Banks should enhance specific service quality dimensions like responsiveness, empathy, and tangibility to boost satisfaction and loyalty. Timely issue resolution and personalized services can significantly improve customer experience. Additionally, satisfaction acts as a key moderator; high service quality alone can't prevent dissatisfaction from undermining loyalty. Regular assessments to address causes of dissatisfaction, like transaction delays, are essential. Lastly, investing in physical and digital infrastructure, such as upgrading ATMs and online platforms, can enhance student satisfaction and reinforce loyalty, strengthening the bank's competitive edge.

5. Conclusion, Limitations, and Future Research Scope

This study concludes that service quality dimensions, particularly tangibility, empathy, and responsiveness, are vital for enhancing student satisfaction and loyalty towards banking services in higher learning institutions. Modernizing facilities like ATMs and digital platforms significantly improves students' perceptions of service quality. Additionally, investing in staff training to enhance empathy and responsiveness leads to a more personalized banking experience, fostering loyalty. The findings indicate that satisfaction is a crucial mediator between service quality and loyalty, helping to maintain loyalty despite occasional service lapses. Aligning service improvements with strategies enhancing overall student satisfaction is essential for long-term relationships and competitive resilience.

The study has several limitations. First, focusing on Universities in Kilimanjaro, Tanzania, restricts the findings' applicability to other regions or demographics. While the sample is representative, it may not capture the full diversity of students' experiences across socioeconomic or cultural contexts. Second, using cross-sectional data provides only a snapshot of relationships, potentially missing their evolution. Third, some respondents were hesitant to participate fully, which may have introduced response bias. Lastly, the study only included students, excluding other banking customers whose experiences could differ significantly.

Future research should address limitations by including a diverse sample across various regions, institutions, and demographics. Comparative studies of urban and rural populations or specific segments like working professionals and retirees can deepen the understanding of service quality, satisfaction, and loyalty. Longitudinal studies may reveal how changes in service quality affect satisfaction and loyalty over time, helping banks adapt strategies. Additionally, exploring the impact of mobile banking innovations on student satisfaction and loyalty, along with qualitative methods like interviews, will enhance insights into students' banking needs and expectations.

Disclosure statement

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