



Assessment of Fintech Payment Platform Service Quality in Savings and Loans Companies in Accra Metropolis

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Abstract

This study examines service quality in FinTech payment platforms used by Savings and Loans Companies in Accra, Ghana, by analysing gaps between customers' expectations and perceptions across the five SERVQUAL dimensions: tangibles, reliability, responsiveness, assurance, and empathy.

A quantitative research design was employed. Data were collected from 386 customers using a structured SERVQUAL-based questionnaire. Paired-samples t-tests were conducted to assess expectation-perception gaps, while paired correlations and Cohen's d were used to evaluate the strength and practical significance of the observed differences. The results reveal statistically significant expectation-perception shortfalls across all five service quality dimensions, operationalised as positive E – P scores because expectations exceeded perceptions. The largest shortfall occurred in responsiveness, followed by assurance and reliability. Although expectations and perceptions were moderately to strongly correlated, the effect sizes were small but meaningful, indicating persistent service-quality deficiencies in FinTech payment platform delivery within the Savings and Loans sector.

This study extends the SERVQUAL framework to FinTech payment platforms within non-bank financial institutions, demonstrating its continued relevance as a theory-testing and diagnostic tool for evaluating service quality in technology-mediated financial services in an emerging economy context. The findings suggest that improvements in responsiveness, assurance, and reliability are particularly critical for strengthening service quality in FinTech payment platforms used by Savings and Loans Companies. From a policy perspective, the results provide empirical support for regulators such as the Bank of Ghana to develop service quality benchmarks and consumer protection standards, in line with ongoing efforts to enhance trust and performance within Ghana's FinTech ecosystem.

Keywords: FinTech Payment Platforms; Service Quality Gaps; SERVQUAL Model; Customer Expectations; Customer Perceptions; Savings and Loans Companies.

1. Introduction

In recent years, FinTech payment platforms have revolutionised financial services delivery globally. FinTech payment platforms offer low-cost, real-time, and accessible financial transactions through mobile money, mobile banking or USSD codes (Arner, Barberis, & Buckley, 2016). According to Demirgüç-Kunt et al. (2018), FinTech Payment platforms have become critical enablers of financial inclusion, especially in developing economies where formal banking infrastructure is limited. However, the success of FinTech payment platforms depends not only on adoption rates but also on the quality of service

offered. Studies indicate that poor service quality weakens customers' trust and hinders continuous usage of FinTech payment platform services (Pham & Ho, 2015; Sharma, Singh, & Sharma, 2024).

While most research on the quality of FinTech payment platforms has focused on commercial banks (Amin, 2016; Ighomereho, Isibor, & Eromafuru, 2022), it has not yet explored non-bank financial institutions, such as Savings and Loans Companies. Savings and Loans Companies serve micro-, small-, and medium-scale customers, particularly in developing countries. Savings and Loans Companies are gradually integrating FinTech payment platforms into their operations (Bank of Ghana, 2023). In this institutional context, integrating FinTech payment platforms into Savings and Loans Companies' operations will enhance financial inclusion and customer satisfaction.

Examining the quality of FinTech payment platform services in Ghanaian Savings and Loans Companies is therefore imperative to enhance customer satisfaction and continued usage.

Customer concerns about FinTech payment platform downtime, failed transactions, and poor complaint resolution persist, even though FinTech payment platforms promise to enhance financial inclusion. This raises urgent questions about whether FinTech payment platforms meet or fall short of customer expectations in Savings and Loans Companies. Addressing these questions is critical to sustaining customer trust and guiding regulatory intervention in the FinTech payment ecosystem. However, empirical studies explicitly measuring expectation–perception gaps in FinTech payment platform service delivery within Savings and Loans Companies remain scarce.

Consistent with SERVQUAL, this study defines the service-quality gap as expectation minus perception ($E - P$). A positive score therefore denotes a service shortfall because expected service exceeds perceived performance; zero denotes no gap; and a negative score denotes performance exceeding expectations. The five hypotheses predict statistically significant positive $E - P$ shortfalls for tangibles, reliability, responsiveness, assurance, and empathy. This convention is used consistently in the hypotheses, analysis, tables, discussion, and conclusion.

This study is positioned as a theory-testing exercise that applies the SERVQUAL framework (Parasuraman, Zeithaml, & Berry, 1988) to the FinTech payment platform within the context of Savings and Loans Companies in an African emerging economy, such as Ghana. At the same time, it generates contextual insights that may inform adaptations of SERVQUAL to technology-mediated financial services.

The study, therefore, adopts a hypothesis-driven SERVQUAL approach to empirically test expectation–perception gaps across all five service quality dimensions, with particular attention to identifying the dimensions with the most pronounced gaps. The study surveyed 386 active customers of Savings and Loans Companies in Accra, Ghana, using a structured SERVQUAL-based instrument. Paired sample *t*-tests, effect size analysis, and correlations were employed to measure service quality gaps.

The choice of Ghana and Savings and Loans Companies as the research setting is theoretically relevant because they exemplify semi-formal financial institutions in an African developing economy, where FinTech payment platform adoption is high but digital literacy and infrastructure constraints shape service delivery.

The study's novelty lies in applying the original SERVQUAL expectation–perception diagnostic—not merely performance-only predictors—to FinTech payment platforms in Ghanaian Savings and Loans

Companies. This semi-formal non-bank setting remains underrepresented relative to commercial and Islamic banking. It further shows a distinctive hierarchy of shortfalls: responsiveness is most pronounced, assurance and reliability follow, and tangibles and empathy are smaller but still significant. This contextual validation provides both a theoretical stress test of SERVQUAL in a hybrid digital–human service environment and actionable diagnostics for providers and regulators.

2. Literature

2.1. Service Quality Models

Service quality represents the extent to which customers' perceptions are met or exceeded by actual service performance (Parasuraman, Zeithaml, & Berry, 1988). Over the years, several frameworks have been proposed to conceptualise and measure service quality. Among these, the SERVQUAL model is the most used globally. The SERVQUAL model explains service quality as the gap between customer expectations and perceptions across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. SERVQUAL model's gap-based approach provides an analytical tool for identifying areas where services underperform (Ladhari, 2009). Other frameworks include the SERVPERF model (Cronin & Taylor, 1992), which focuses solely on performance perception, and the E-S-QUAL model (Parasuraman, Zeithaml & Malhotra, 2005), which adapts SERVQUAL to the electronic service environment. The SERVPERF model maintains that performance-only measures provide a more accurate assessment. However, the SERVQUAL model remains attractive for contexts where expectation-perception differences are critical to customer assessments, such as in FinTech payment platforms.

SERVQUAL model was initially designed for traditional service encounters. However, numerous studies have successfully adapted it to FinTech payment platforms (Lin, 2007; Al-Hawari & Ward, 2006). This adaptability makes it a suitable starting point for analysing service quality in FinTech payment platforms, even though contextual refinement may be necessary.

2.2 Service Quality Research in Financial Services

Table 1 below presents the literature on service quality in financial services.

Table 1: Service Quality in General Financial Services

Author(s) & Year	Service Quality Framework	Variables	Key Findings	Service Type	Context	Sample (Size and Unit of analysis)	Methods
Ali, Khalid & Bilal (2020).	SERVQUAL Model Dimensions: Tangible Reliability Responsiveness Empathy Assurance	Independent Variables Tangible Reliability Responsiveness Empathy Assurance Dependent Variables Customers Satisfaction	SERVQUAL dimensions (Tangibles, Reliability, Responsiveness Empathy and assurance) are independent and positively associated with customer satisfaction	Microfinance Financial Services	MicroFinance Companies in Mansehra, Pakistan	439 customers of MicroFinance companies in Mansehra The convenience sampling method was used.	Correlation analysis Multiple regression analysis
Islam, A., Rahman, & Al Asheq (2020)	SERVQUAL Model Dimension: Reliability Responsiveness Visibility Employees commitment Access to service	Independent Variable Reliability Responsiveness Visibility Employees commitment Access to service Dependent Variables Customers	Visibility, responsiveness, and employees' commitment have a positive and significant influence on customer satisfaction	Private commercial banks	Private banks of Bangladesh	200 Private bank customers of Bangladesh Convenience sampling method	SEM

		satisfaction					
Wang, Masukujjaman, Alam, Ahmad, Lin, and Ho (2023).	SERVPERF Model Dimensions: Assurance, Reliability, Responsiveness, Tangibility, Accessibility, Empathy	Independent Variables Assurance Reliability, Responsiveness, Tangibility, Accessibility, Empathy Dependent Variables Customers satisfactions	Assurance, Reliability, Responsiveness, and Tangibility have significant effects on customer satisfaction	non-banking financial institutions	non-banking financial institutions in Bangladesh	217 customers purposive random sampling method	PLS-SEM
Haron, Abdul Subar & Ibrahim. (2020)	PAKSERV Model Dimensions: Tangibility Reliability Assurance Sincerity Personalisation Formality	Independent Variables Tangibility Reliability Assurance Sincerity Personalisation Formality Dependent Variable Customer Satisfaction	A positive relationship between PAKSERV dimensions (Tangibility, Reliability, Assurance, Sincerity, Personalisation and formality of service quality, customers' Satisfaction	Islamic banks	Islamic banks in the states of Kuala Lumpur and Selangor, Malaysia	401 customers of Islamic banks convenience sampling	SEM

Alnaser, Ghani, & Rahi (2017)	PAKSERV model Dimensions: Tangibility Reliability Assurance Sincerity Personalisation Formality	Independent Variables Tangibility Reliability Assurance Sincerity Personalisation Formality Dependent Variable Customer Satisfaction	PAKSERV model (Tangibility, Reliability, assurance, Sincerity, Personalisation, formality) had a significant impact on customer satisfaction	Banking Services of Islamic Banks in Palestine	Islamic Banks in Palestine	482 customers of Islamic banks Convenience sampling method	Structural equation model (SEM)
Ananda & Devesh (2017)	SERVQUAL model	Independent Variables Tangible Reliability Responsiveness Assurance Empathy Dependent Variable Customer satisfaction	The expectation of customers was higher than their perception of all five service quality dimensions. The highest and the lowest service quality gap was found in the dimensions of empathy and tangibility, respectively.	Retail banking services	Retail banks in Oman	152 retail banking customers in Oman Snowball sampling technique	Correlation and Multiple Regression Analysis
Etana (2021)	SERVQUAL Model Dimensions: Tangible Reliability Responsiveness	Independent Variables Tangible Reliability Responsiveness Assurance	A significant gap exists between customers' perceptions and expectations. Among the five dimensions of service quality, the	Commercial bank	Oromia International Bank in Ethiopia	321 customers of Oromia International Bank Simple Random	Multiple regression

	Assurance Empathy	Empathy Dependent Variable Customer satisfaction	largest negative gap was found in tangibility.			Sampling	
Pakurár, Haddad, Nagy, Popp & Oláh (2019)	SERVQUAL model dimensions: Tangible Responsiveness Empathy Assurance, Reliability, Access Financial aspect, employee competences	Independent Variable: tangibles, responsiveness, empathy, assurance, reliability, access, financial aspect, and employee competencies Dependent Variable Customer Satisfaction	All eight original dimensions (tangibles, responsiveness, empathy, assurance, reliability, access, financial aspect, and employee competencies) showed positive and significant correlations with customer satisfaction.	Commercial bank	Jordanian banks	825 customers in the Jordanian banking sector Convenience Sampling	Correlation analysis

Rahaman, Ali, Kejing, Taru & Mamoon (2020)	SERVQUAL Model Dimensions: Reliability Assurance. Responsiveness Tangibles Empathy Access to Service Employee Competence	Independent Variables Reliability Assurance Responsiveness Tangibles Empathy Access to Service, Employee Competence Dependent Variables Customers Satisfaction	Service quality(Reliability, Assurance, Responsiveness, Tangibles, Empathy, and Access to service) significantly affects customer satisfaction	Commercial banking	Commercial banks in Bangladesh	212 Walking Bangladeshi banking customers Convenience Sampling	Regression analysis
Joshi (2021)	SERVPERF model dimensions: Tangibility Reliability Responsiveness Assurance Empathy	Independent Variable Tangibility Reliability Responsiveness Assurance Empathy Dependent Variable Customer Satisfaction	Service quality dimensions are positively associated with customer satisfaction. All the service quality dimensions have a statistically significant positive impact on customer satisfaction, except for tangibility.	Commercial banks	Commercial banks operating in Kailali District, Nepal	327 depositor customers of commercial banks in Nepal Convenience Sampling	Correlation and Multiple Regression Analysis
Marković, Dorčić, and Katusić (2015)	SERVQUAL Model Dimensions: Tangible	Independent Variables Tangible Reliability	There is an overall negative discrepancy between bank customers'	Commercial banks	Commercial banks in Croatia	511 banking customers in Croatia	SERVQUAL Gap analysis

	Reliability Responsiveness Assurance Empathy	Responsiveness Assurance Empathy Dependent Variable Customer Satisfaction	expectations and perceptions, indicating that Customers included in the sample expressed dissatisfaction with banking service quality in Croatia. The greatest gap occurs in reliability and responsiveness, calling for improvement measures.			Convenience Sample	
Al-Azzam (2015)	SERVQUAL	Independent Variables Tangibles Reliability Responsiveness Assurance Empathy Dependent Variable Customer satisfaction	Tangibility, responsiveness, reliability, empathy, and assurance are positively associated with customer satisfaction.	Arabian Banks	Arabian Banks in Irbid City, Jordan	400 Arabian Bank customers in Irbid City, Jordan The convenience sampling method was used.	Correlations and Multiple Regression Analysis
Vencataya, Pudaruth, Juwaheer, Dirpal & Sumodhee (2019)	SERVQUAL Model dimensions: Tangibles Reliability Responsiveness	Independent Variables Tangibles Reliability Responsiveness Assurance	All five service quality dimensions have a significant and positive influence on customer satisfaction	Commercial banks	Commercial banks in Mauritius	200 banking customers Simple random sampling	Multiple regression analysis

	Assurance Empathy	Empathy Dependent Variable Customer satisfaction					
Kant & Jaiswal (2017).	SERVQUAL Model	Independent Variable Tangibility, reliability, Assurance, Responsiveness, Empathy, and Image Dependent Variable Customer Satisfaction	Responsiveness is the most significant predictor of customer satisfaction. The image (corporate image) has a less significant positive relationship with customer satisfaction, followed by all other dimensions. Reliability has an insignificant relationship with customer satisfaction	Public Sector banks	Eight Public Sector banks in India	480 customers of eight public sector banks in India Purposive sampling method	SEM
Khamis & AbRashid (2018).	CARTER Model Dimensions: Compliance Assurance Reliability Tangible Empathy Responsiveness	Independent Variable Compliance Assurance Reliability Tangible Empathy Responsiveness Dependent Variable Customer	Empathy, compliance, and reliability were the significant predictors of customer satisfaction.	Islamic Banking	People's Bank of Tanzania Islamic Banking Division	255 customers of the Islamic People's Bank of Zanzibar Convenience	Correlation and multiple regression

		Satisfaction					
Narteh, B. (2018)	SERVQUAL Model and BSQ Model Dimension Tangible Reliability Responsiveness Assurance Empathy Access Service Portfolio Effectiveness Price	Independent Variables Tangible Reliability Responsiveness Empathy Access Service Portfolio Effectiveness Price Dependent Variables Customer satisfaction	Tangibles, Assurance, Reliability, Empathy, and Price predicted customer satisfaction in the banking industry in Ghana.	Commercial banks	Licensed commercial banks in Ghana	560 retail bank customers from 18 commercial banks in Ghana Random Sampling method was used.	Structural equation modelling

2.3. Literature on Service Quality in Financial Services

2.3.1. Service Quality Frameworks Used

Most empirical studies on service quality in financial services have adopted the SERVQUAL model (Parasuraman et al., 1988) or its extensions. SERVQUAL has been widely applied across diverse banking contexts, including Pakistan (Ali et al., 2020), Oman (Ananda & Devesh, 2017), Ethiopia (Etana, 2021), Croatia (Marković et al., 2015), Jordan (Al-Azzam, 2015), Mauritius (Vencataya et al., 2019), and Ghana (Narteh, 2018). Across these studies, the core SERVQUAL dimensions, reliability, responsiveness, and assurance, consistently emerge as strong drivers of customer satisfaction, while also frequently exhibiting the largest expectation–perception gaps.

Several studies employed the SERVPERF model (Cronin & Taylor, 1992), which focuses exclusively on perceived performance rather than expectation–perception discrepancies (e.g., Wang et al., 2023; Joshi, 2021). While these studies confirmed the predictive importance of assurance, reliability, and responsiveness, they did not capture service quality gaps, thereby limiting their diagnostic value for identifying unmet customer expectations.

Other scholars have adopted culturally or contextually adapted models. The PAKSERV model has been applied extensively in Islamic banking contexts, particularly in Malaysia and Palestine, by incorporating dimensions such as sincerity, personalisation, and formality alongside traditional SERVQUAL constructs (Haron et al., 2020; Alnaser et al., 2017). Similarly, the CARTER model emphasised compliance as a distinct dimension in Islamic banking in Tanzania, where compliance, reliability, and empathy were the strongest predictors of customer satisfaction (Khamis & AbRashid, 2018). In Ghana, Narteh (2018) applied the Banking Service Quality (BSQ) model, extending SERVQUAL with price, service portfolio, and access, and found that these context-specific dimensions significantly enhanced explanatory power.

Overall, while alternative frameworks introduce additional constructs, the SERVQUAL dimensions remain central across models and contexts, supporting their continued relevance in financial services research.

2.3.2. Contexts Studied

Empirical studies on service quality in financial services have primarily focused on commercial banks, particularly in South Asia and the Middle East. In Bangladesh, Rahaman et al. (2020) and Islam et al. (2020) examined service quality in private commercial banks, while Joshi (2021) and Kant and Jaiswal (2017) explored similar issues in Nepal and India, respectively. These studies largely confirm the salience of reliability, responsiveness, and assurance in shaping customer satisfaction.

Islamic banking has received substantial attention in Malaysia, Palestine, Jordan, and Tanzania, where models such as PAKSERV and CARTER incorporate culturally sensitive service quality dimensions (Haron et al., 2020; Alnaser et al., 2017; Khamis & AbRashid, 2018). Although non-bank financial institutions remain underexplored, Wang et al. (2023) examined service quality in non-bank institutions in Bangladesh, while Ali et al. (2020) focused on microfinance institutions in Pakistan.

In Sub-Saharan Africa, empirical contributions remain relatively limited. Existing studies include research from Ethiopia (Etana, 2021), Tanzania (Khamis & AbRashid, 2018), Mauritius (Vencataya et al., 2019), and Ghana (Narteh, 2018). While these studies provide valuable insights, most focus on commercial or Islamic banks rather than semi-formal institutions such as Savings and Loans Companies, indicating a contextual gap in the literature.

2.3.3 Methods Employed

Most studies on service quality in financial services have adopted quantitative research designs. Convenience sampling is the most common approach (Ali et al., 2020; Haron et al., 2020; Al-Azzam, 2015), although some studies have used random sampling methods (Etana, 2021; Vencataya et al., 2019). Purposive and snowball sampling approaches are less frequent (Ananda & Devesh, 2017; Wang et al., 2023). Sample sizes vary considerably, ranging from 152 respondents in Oman (Ananda & Devesh, 2017) to 825 respondents in Jordan (Pakurár et al., 2019), with most studies surveying between 200 and 500 individual bank customers. Analytical techniques commonly include multiple regression analysis (Ali et al., 2020; Vencataya et al., 2019; Al-Azzam, 2015), correlation analysis (Pakurár et al., 2019), and structural equation modelling (SEM or PLS-SEM) (Islam et al., 2020; Wang et al., 2023; Haron et al., 2020). SERVQUAL gap analysis has been applied less frequently, appearing mainly in studies from Oman (Ananda & Devesh, 2017) and Croatia (Marković et al., 2015).

2.3.4 Key Findings Across Studies

Reliability and Responsiveness

Across multiple contexts, reliability and responsiveness consistently emerge as the most critical service quality dimensions. Studies in Croatia, Ethiopia, and Oman report huge gaps in these dimensions (Marković et al., 2015; Etana, 2021; Ananda & Devesh, 2017), reflecting persistent concerns about transaction accuracy, system dependability, and response speed.

Assurance

Assurance has been identified as a strong predictor of customer satisfaction across regions, highlighting the importance of trust, competence, and perceived security in financial services (Ali et al., 2020; Rahaman et al., 2020; Haron et al., 2020).

Tangibles

Findings on tangibles are mixed. Tangibles were less influential in Nepal (Joshi, 2021), but significant in Ghana and Tanzania, where physical facilities, system interfaces, and accessibility remain important to customers (Narteh, 2018; Khamis & AbRashid, 2018).

Empathy

Empathy generally exerts a weaker influence than reliability and responsiveness but remains a relevant dimension across most contexts, particularly where personalised support and customer guidance are valued (Vencataya et al., 2019).

Additional Dimensions

Several studies identify context-specific dimensions beyond SERVQUAL, including compliance, price, employee commitment, service portfolio, and effectiveness. These findings underscore the importance of contextualising service quality models while retaining the core SERVQUAL structure.

2.3.4 Implications for the Present Study

Existing studies demonstrate that SERVQUAL remains a robust framework for assessing service quality in financial services, particularly for identifying expectation–perception gaps. However, existing studies focus predominantly on commercial and Islamic banks, with limited attention to semi-formal institutions such as Savings and Loans Companies and to FinTech-mediated payment services in Sub-Saharan Africa. By applying SERVQUAL to FinTech payment platforms within Ghana’s Savings and Loans sector, the present study addresses both a contextual and methodological gap, extending gap-based service quality analysis to an under-researched institutional setting.

Table 2: Service Quality in Digital Financial Services

Author(s) & Year	Service Quality Framework	Variables	Key Findings	Service Type	Context	Sample (Size and Unit of analysis)	Methods
Zouari & Abdelhedi (2021)	SERVQUAL Model dimensions: Confidence Compliance Human skills Tangibles	Independent Variable Confidence Compliance Human skills Tangibles Dependent variables Customer satisfaction	Positive and significant relationship between SERVQUAL dimensions (Confidence, Compliance, Human Skills, digitalisation) and customer satisfaction	Digital payment	Tunisian Islamic Bank	145 Tunisian Islamic bank customers Convenience sampling	Multiple regression
Al-Hawary & Al-Smeran (2017)	Electronic service quality (e-SQ) dimensions: (efficiency, reliability, responsiveness, fulfilment, and privacy)	Independent Variable: Electronic Service Quality Dimensions (efficiency, reliability, responsiveness, fulfilment, and privacy) Dependent Variable: Customer Satisfaction	Efficiency, reliability, and fulfilment are the strongest predictors of customer satisfaction. Privacy and responsiveness had smaller but still significant effects.	Electronic Service in Islamic Banks	Jordan Islamic Bank, Islamic International Arab Bank, and Al Rajhi Bank in Jordan	Customers of Islamic banks in Jordan 208 customers were sampled Random sampling technique	Multiple regression

Amin (2016)	Internet banking service quality dimensions: Personnel needs Site Organisation User Friendliness Efficiency of Website	Independent Variable Personnel needs Site Organisation User Friendliness Efficiency of Website Dependent Variables E-Customers satisfaction	Internet banking service quality dimensions have a positive association with e-customer satisfaction	Internet banking services	Ten commercial banks in Malaysia	520 internet banking customers from ten commercial banks Convenience sampling method	Structural equation modelling
Sakhei et al. (2014)	SERVQUAL Model Dimension: reliability, efficiency, responsiveness, fulfilment, security/privacy, and website design	Independent Variable: SERVQUAL Dimension: reliability, efficiency, responsiveness, fulfilment, security/privacy, and website design Dependent Variable Customer Satisfaction	All six dimensions (reliability, efficiency, responsiveness, fulfilment, security/privacy, and website design) were significantly and positively correlated with customer satisfaction. Reliability showed the strongest correlation with customer satisfaction. Website design had	Internet banking in a Commercial bank	Commercial banks in Iran	Sample Size: 384 respondents, selected via random sampling using Morgan's table (infinite population).	Spearman correlation

			the weakest but still significant correlation.				
Sharma (2021)	Service Quality Dimension: Security Responsiveness Reliability Ease of use	Independent Variable Security Responsiveness Reliability Ease of Use Dependent Variable Customer satisfaction	Service quality dimensions have a significant impact on customer satisfaction	Digital Payments	India	373 professional workers in India Stratified sampling method	Multiple regression
Pramesty & Sukardi (2024)	E-Service Quality Dimensions: Efficiency Reliability Fulfillment Privacy Responsiveness Contacts	Independent Variable Efficiency Reliability Fulfillment Privacy Responsiveness Contacts Dependent Variable Customer Retention	Efficiency, reliability, fulfilment, privacy, and responsiveness have no significant effect on customer retention when using bank digital services Contact has a positive and significant effect on customer retention	Digital banking services	Islamic banks in Surakarta city, Indonesia	100 customers of an Islamic bank in Indonesia Convenience sampling method	Multiple regression analysis

Sharma et al. (2024)	Integrated SERVQUAL–TAM model	Independent Variable SERVQUAL dimensions Mediators Perceived Usefulness, Perceived Ease of Use Dependent Variable Utilisation	SERVQUAL dimensions influenced FinTech utilisation indirectly through TAM constructs, highlighting the mediating role of technology acceptance.	FinTech payment platforms	Emerging economy context	FinTech users	SEM
Paudel (2024)	Integrated SERVQUAL–TAM framework (Trust, Perceived Usefulness, Perceived Ease of Use)	Independent Variable: SERVQUAL dimensions Mediators Trust, Perceived Usefulness, Perceived Ease of Use Dependent Variable: Service Quality & Customer Satisfaction	SERVQUAL dimensions affect customer satisfaction indirectly through trust and TAM constructs, underscoring the role of technology acceptance in evaluating e-banking service quality.	E-banking services	Developing economy context	E-banking users	SEM

Alsayed Suliman (2024)	E-SERVQUAL for Mobile Wallets (Efficiency, Privacy, System Availability, Responsiveness, Interface Design)	Independent Variable E-SERVQUAL dimensions Dependent Variable: Perceived Service Quality / Satisfaction	Developed and validated a mobile wallet-specific E-SERVQUAL scale, with system efficiency and privacy as dominant dimensions.	Mobile wallet services	Emerging market context	Mobile wallet users	CFA & regression
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2.4. Service Quality Studies on Digital Financial Services

2.4.1. Service Quality Frameworks Used

Empirical studies on service quality in digital financial services have predominantly relied on the SERVQUAL framework or its adaptations to assess customer evaluations in technology-mediated environments. Studies on digital payments and e-banking have applied the original SERVQUAL model across diverse contexts, including India (Sharma, 2021), Nigeria (Yusuf et al., 2020), Jordan (Alkhazaleh & Haddah, 2021), and Tunisia (Zouari & Abdelhedi, 2021). Across these studies, responsiveness, reliability, and assurance consistently emerge as the most salient dimensions influencing customers' evaluations of service quality in digital financial services.

Beyond the traditional SERVQUAL framework, several studies have adopted electronic service quality (E-SQ/E-SERVQUAL) models, which emphasise dimensions more closely aligned with digital interfaces. These include efficiency, fulfilment, privacy, system availability, responsiveness, and contact or support (Al-Hawary & Al-Smeran, 2017; Pramesty & Sukardi, 2024; Alsayed Suliman, 2024). Such models reflect the growing recognition that digital service delivery requires extensions to conventional service quality constructs.

More recently, a stream of literature has integrated SERVQUAL with technology adoption models, particularly the Technology Acceptance Model (TAM). Sharma et al. (2024) and Paudel (2024) combine SERVQUAL dimensions with TAM constructs, such as perceived usefulness, perceived ease of use, and trust, to explain outcomes, including utilisation and customer satisfaction. While these integrated models enhance explanatory power regarding behavioural outcomes, they typically treat SERVQUAL dimensions as antecedents to adoption or satisfaction rather than as diagnostic indicators of service quality gaps.

A smaller but growing body of work has also introduced context-specific service quality dimensions, such as human skills, compliance, confidence, visibility, and direct contact or support, particularly in Islamic banking and mobile wallet contexts (Zouari & Abdelhedi, 2021; Islam et al., 2020; Pramesty & Sukardi, 2024). Collectively, these studies demonstrate the adaptability of service quality models to digital and institutional contexts, while also highlighting the diversity of constructs employed across studies.

2.4.2. Contexts Studied

The literature on digital financial service quality spans a wide range of geographical and institutional contexts, with a strong emphasis on commercial and Islamic banks. In South and Southeast Asia, studies have examined internet banking and digital payments in Malaysia (Amin, 2016), India (Sharma, 2021; Sharma et al., 2024), Bangladesh (Wang et al., 2023), and Indonesia (Pramesty & Sukardi, 2024). Evidence from West Africa is comparatively limited, with Nigerian studies focusing on e-banking and FinTech adoption (Yusuf et al., 2020; Ighomereho et al., 2022).

The Middle East and North Africa region is well represented through studies in Jordan, Tunisia, and Iran, particularly in Islamic banking and internet banking contexts (Al-Hawary & Al-Smeran, 2017; Zouari &

Abdelhedi, 2021; Sakhei et al., 2014). Sub-Saharan Africa is less prominently featured, though Ghanaian research highlights the role of mobile money and FinTech in advancing financial inclusion while noting persistent service-quality challenges (Dzokoto & Appiah, 2021; Asante & Shaibu, 2022). Notably, semi-formal financial institutions, such as Savings and Loans Companies, remain underexplored compared with commercial banks and FinTech payment platforms.

2.4.3. Main Methods Employed

Methodologically, the literature is dominated by quantitative, cross-sectional survey designs. Most studies employ structured questionnaires to collect customer perceptions of service quality and related outcomes (Amin, 2016; Zouari & Abdelhedi, 2021; Sharma, 2021; Sharma et al., 2024; Pramesty & Sukardi, 2024; Wang et al., 2023). Convenience sampling is the most frequently used sampling technique (Amin, 2016; Zouari & Abdelhedi, 2021; Pramesty & Sukardi, 2024), although some studies employ random or stratified sampling methods (Sakhei et al., 2014; Sharma, 2021).

In terms of analytical techniques, correlation analysis and multiple regression are commonly applied to examine relationships between service quality dimensions and outcomes such as satisfaction or retention (Sharma, 2021; Sakhei et al., 2014; Pramesty & Sukardi, 2024). More recent studies increasingly employ structural equation modelling (SEM or PLS-SEM) to test integrated SERVQUAL–TAM or E-SERVQUAL models (Amin, 2016; Wang et al., 2023; Sharma et al., 2024; Paudel, 2024). Sample sizes vary widely, ranging from about 100 respondents in Indonesia (Pramesty & Sukardi, 2024) to over 500 respondents in large-scale studies in India (Sharma, Singh, & Sharma, 2024).

2.4.4 Key Findings Across the Literature

Reliability and Responsiveness

Reliability and responsiveness are among the most consistently significant service quality dimensions in digital financial services. Reliability emerged as the strongest predictor of service quality or satisfaction in studies conducted in Iran and Bangladesh (Sakhei et al., 2014; Wang et al., 2023). Responsiveness was particularly salient in India and Tunisia (Sharma, 2021; Zouari & Abdelhedi, 2021), although its influence was weaker in Jordan (Al-Hawary & Al-Smeran, 2017) and insignificant for customer retention in Indonesia (Pramesty & Sukardi, 2024). These mixed findings suggest that the importance of responsiveness may vary across institutional contexts and outcome variables.

Assurance and Security

Assurance-related dimensions, including security and confidence, play a critical role in shaping customer evaluations of digital financial services. Studies in India and Tunisia show that security and confidence significantly influence customer satisfaction, reflecting persistent concerns about fraud, transaction safety, and trust in digital payment ecosystems (Sharma, 2021; Zouari & Abdelhedi, 2021).

Ease of Use and User Friendliness

Ease of use and user friendliness are repeatedly identified as important drivers of satisfaction in digital banking environments. Amin (2016) and Sharma (2021) find that intuitive interfaces and ease of navigation significantly enhance customer satisfaction in Malaysia and India, respectively, reinforcing the relevance of usability in technology-mediated financial services.

Privacy

Findings on privacy are mixed. While privacy is significant but less influential in Jordan (Al-Hawary & Al-Smeran, 2017), it does not significantly affect customer retention in Indonesia (Pramesty & Sukardi, 2024). These inconsistencies suggest that privacy concerns may be context-dependent or overshadowed by more immediate service performance issues.

Tangibles and Website Design

Tangibles and website design generally show weaker effects than operational and trust-related dimensions. For example, Sakhei et al. (2014) report that website design was the weakest, though still significant, predictor of customer satisfaction in internet banking.

Emerging and Context-Specific Dimensions

Several studies highlight additional dimensions beyond traditional SERVQUAL or E-SERVQUAL constructs. Islamic banking contexts emphasise human skills, compliance, and visibility (Zouari & Abdelhedi, 2021; Islam et al., 2020), while direct contact or support significantly influences customer retention in digital banking services in Indonesia (Pramesty & Sukardi, 2024). These findings underscore the contextual nature of service quality in digital financial services.

2.4.5 Positioning of the Present Study

Overall, the literature extensively uses SERVQUAL, E-SERVQUAL, and integrated SERVQUAL–TAM models to explain satisfaction, trust, utilisation, and retention in digital financial services, predominantly in commercial and Islamic banking contexts. In contrast, relatively few studies apply SERVQUAL in its original expectation–perception form to diagnose service quality gaps, particularly within semi-formal financial institutions such as Savings and Loans Companies. This gap motivates the present study’s focus on a diagnostic SERVQUAL approach to assess the service quality of FinTech payment platforms in the Ghanaian Savings and Loans Companies sector.

2.4.6 Framework for the study – SERVQUAL Model

This study builds on the reviewed literature by adopting the SERVQUAL model (Parasuraman et al, 1988) as its theoretical foundation to evaluate the service quality of FinTech payment platforms in Savings and Loans Companies in Accra Metropolis. The SERVQUAL model (Parasuraman et al., 1988) posits that service quality results from the gap between customer expectations and perceptions across five dimensions: tangibles, reliability, responsiveness, assurance and empathy. In FinTech payment platform contexts, these dimensions reflect not only traditional service delivery but also digital interface quality, system performance, security, user assistance and communication clarity. According to the model, service quality is deemed inferior when perceptions fall short of expectations. This expectation–perception gap has been widely observed in financial services research, including both traditional banking (Marković et al., 2015; Etana, 2021) and digital financial services such as internet banking and FinTech payment platforms (Sakhei et al., 2014; Sharma et al., 2024).

The SERVQUAL model is suitable because it systematically compares customers' expectations with the service they receive across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. This expectation–perception gap approach provides a diagnostic tool for identifying service shortfalls. Unlike earlier research, which has often used SERVQUAL dimensions as independent variables to predict satisfaction or loyalty (Amin, 2016; Joshi, 2021), this study applies the gap model directly. In this sense, the paper is positioned as a theory-testing exercise: it tests whether SERVQUAL remains valid and valuable in a technology-mediated, semi-formal financial context.

The present study is theoretically positioned as a contextual validation of the traditional SERVQUAL model in a FinTech Savings and Loans environment, rather than as a full-scale extension or integration with technology adoption theories. Specifically, the study applies the original five SERVQUAL dimensions and expectation–perception gap logic to assess service quality in FinTech payment platforms used by Savings and Loans Companies in Ghana. In doing so, it examines whether the SERVQUAL structure remains empirically meaningful in a semi-formal, hybrid human-digital financial setting in an emerging economy. While the analysis reveals additional contextual factors, such as digital literacy support, ecosystem reliability and trust vulnerability, that appear to shape how customers experience service quality, these are treated as emergent insights and directions for future model development rather than as formally specified constructs within the current measurement model. The primary theoretical contribution, therefore, lies in validating and stress-testing SERVQUAL in a new FinTech context and highlighting context-specific nuances that future research may incorporate into extended service quality frameworks.

Prior studies in digital banking and FinTech environments consistently show that customers' perceptions often fall short of expectations due to infrastructural limitations, technological inconsistencies, and limited user support (Amin, 2016; Sharma et al., 2024; Zouari & Abdelhedi, 2021). Based on the theoretical foundation and empirical evidence, the following hypotheses are developed.

Tangibles

Tangibles refer to the physical and interface-related attributes of a service, including layout, design, accessibility, and visual appeal. In digital financial services, tangibles appear in the usability of mobile applications, the clarity of menus, the responsiveness of screens, and overall interface quality. Studies in Malaysia and Iran show that digital banking users often expect modern, seamless, and visually appealing interfaces but perceive the systems they encounter as less intuitive or less sophisticated (Amin, 2016; Sakhei et al., 2014). In emerging African markets, where USSD-based and basic mobile interfaces remain dominant, customers' expectations—shaped by exposure to more advanced digital platforms—may exceed their actual experiences. Consistent with SERVQUAL's expectation–perception logic, tangibles are therefore expected to exhibit a negative service quality gap.

H1: There will be a significant positive expectation–perception shortfall ($E - P > 0$) between customer expectations and perceptions of tangibles in FinTech payment platforms.

Reliability

Reliability concerns a service's ability to perform dependably and accurately. In FinTech environments, reliability is closely associated with transaction accuracy, system uptime, error-free service and the ability to complete financial operations without unexpected interruptions. Prior research in developing economies highlights widespread challenges, including failed transactions, delayed reversals, and inconsistent system performance (Yusuf et al., 2020; Dzokoto & Appiah, 2021). Because financial transactions involve high perceived risk, customers typically expect reliable performance. When systems falter even infrequently, users perceive substantial gaps between what they expect and what they experience. Consequently, reliability is expected to show a positive $E - P$ service shortfall in FinTech payment platforms.

H2: There will be a significant positive expectation–perception shortfall ($E - P > 0$) between customer expectations and perceptions of reliability in FinTech payment platforms.

Responsiveness

Responsiveness reflects a service provider's willingness and ability to assist customers promptly and effectively. In digital financial services, responsiveness includes how quickly failed transactions are resolved, how timely system feedback is, access to real-time support, and the effectiveness of automated help systems. Cross-country evidence from India, Nigeria, and Bangladesh consistently identifies responsiveness as one of the most problematic dimensions of digital banking and FinTech services, mainly due to delays in dispute resolution and poor communication (Sharma, 2021; Islam et al., 2020). Similar issues have been observed in Ghana's mobile money ecosystem, where long reversal times and delayed feedback contribute to customer dissatisfaction. SERVQUAL theory suggests that slow or inadequate responses sharply reduce perceived service quality, leading to pronounced service gaps.

H3: There will be a significant positive expectation–perception shortfall ($E - P > 0$) between customer expectations and perceptions of responsiveness in FinTech payment platforms.

Assurance

Assurance encompasses service providers' knowledge, courtesy, and trustworthiness, which together shape customer confidence. In digital finance, assurance is closely linked to cybersecurity, fraud prevention, data privacy, staff competence, and transaction accuracy. Empirical studies in Tunisia and Jordan show that customers in emerging markets often express concerns about the safety of digital transactions, even when providers adopt formal security measures (Zouari & Abdelhedi, 2021; Al-Hawary & Al-Smeran, 2017). Lower levels of digital literacy and exposure to fraud incidents further heighten these concerns. In Ghana's Savings and Loans context, where customers may already feel financially vulnerable, expectations regarding safety and trust are likely to exceed perceived performance, resulting in assurance gaps.

H4: There will be a significant positive expectation–perception shortfall ($E - P > 0$) between customer expectations and perceptions of assurance in FinTech payment platforms.

Empathy

Empathy refers to the degree of care, attention, and personalised support provided to customers. In FinTech environments, empathy is reflected in communication clarity, availability of assistance, user guidance, and how fully customer needs are acknowledged. Studies in Mauritius and Malaysia indicate that users often perceive digital platforms as impersonal and insufficiently responsive to individual concerns (Vencataya et al., 2019; Lee & Moghavvemi, 2015). Within Ghana's Savings and Loans sector, many customers require support when navigating digital channels, suggesting relatively high expectations for empathy despite the technology-mediated nature of service delivery. When platforms or staff fail to assist users adequately, negative empathy gaps are likely to emerge.

H5: There will be a significant positive expectation–perception shortfall ($E - P > 0$) between customer expectations and perceptions of empathy in FinTech payment platforms.

4. Methodology

4.1. Study Context

This study was conducted among Savings and Loans Companies in Accra Metropolis, Ghana, where digital financial services are expanding rapidly. Mobile penetration exceeds 120%, and mobile money services are widely used for payments, transfers, and savings (Bank of Ghana, 2023). Despite this growth, service quality challenges persist, including transaction failures, delayed reversals, and poor complaint resolution (Osabutey & Jackson, 2024).

Savings and Loans Companies are semi-formal non-bank financial institutions regulated by the Bank of Ghana. They offer credit and savings products to individuals and small businesses, which commercial banks often fail to serve adequately. In recent years, Savings and Loans Companies have adopted FinTech payment platforms, such as mobile money, USSD, and app-based mobile banking, to improve outreach and efficiency (Asante & Shaibu, 2022). This context is theoretically relevant because it represents an

emerging African economy in Sub-Saharan Africa, characterised by high adoption of FinTech payment platforms but limited digital literacy and infrastructure. A study of Savings and Loans Companies in Accra Metropolis, Ghana, offers valuable insights generalisable to other Savings and Loans Companies across emerging African developing countries.

4.2. Sampling and Data Collection

Customers of Licensed Savings and Loans Companies in Accra Metropolis who actively used the FinTech payment platform formed the study's target population.

4.3. Sample Size Determination

The required sample size for this study was determined using Cochran's (1977) formula for large populations:

$$n_0 = \frac{z^2 p(1-p)}{e^2}$$

Where (n_0) is the initial sample size, (Z) is the z-value corresponding to the desired confidence level, (p) is the estimated proportion (or prevalence) of the attribute in the population, and (e) is the margin of error. In line with standard practice when prior prevalence information is limited, we set $p = 0.50$, reflecting maximum variability and yielding the largest required sample size (Cochran, 1977; Malhotra et al., 2017). The confidence level was set at 95% ($Z = 1.96$), and the margin of error was set at $e = 0.05$. Substituting these values into Cochran's formula gives:

$$n_0 = \frac{1.96^2 0.5(1-0.5)}{0.05^2} = 384$$

Thus, the minimum required sample size was approximately 384 respondents. To account for potential non-response and incomplete questionnaires, the target sample size was rounded upward to 400. After screening and removing incomplete responses, 386 valid questionnaires were retained for analysis, exceeding the minimum required by Cochran's formula. Given the focus on paired comparisons between expectations and perceptions across the SERVQUAL dimensions, this realised sample size provides more than adequate statistical power. Using conventional benchmarks (Cohen, 1988), a post hoc assessment indicates that, with $n = 386$, a two-tailed test at $\alpha = 0.05$ has very high power (well above 0.80) to detect medium effect sizes and acceptable power to detect small-to-medium effects in the expectation–perception gaps. The achieved sample size is therefore sufficient for the study's analytical objectives.

Given the absence of a sampling frame of active users, a convenience sampling approach was employed, a common technique in service quality research where intercept surveys are feasible (Bryman, 2016; Etikan, Musa & Alkassim, 2016; Malhotra et al., 2017). In the context of Savings and Loans Companies in Ghana, customer lists suitable for research cannot be accessed due to confidentiality policies, data protection regulations, and the absence of a centralised, publicly accessible registry of FinTech payment platform users. These constraints are well documented in studies examining financial service delivery in emerging markets, where data privacy restrictions and fragmented systems limit the application of probability-based approaches (Asongu & Odhiambo, 2019; Boateng et al., 2022).

Moreover, FinTech payments platforms are highly transactional, with customers interacting with digital platforms at varying frequencies and through multiple channels. Similar challenges have been reported in digital banking research, where the dynamic and irregular nature of platform interaction makes it difficult to construct sampling frames that accurately reflect user populations (Amin, 2016; Sharma et al., 2024). As a result, probability-based sampling would not only be impractical but would also risk introducing additional bias by excluding infrequent users or those not registered in formal databases.

Given these constraints, researchers approached customers at branch locations during different operational hours to increase diversity in age, gender, transaction history, and purpose of visit. Although convenience sampling inherently limits representativeness, scholars note that it is methodologically appropriate and empirically accepted for studies aiming to capture perceptions of active digital service users in settings where controlled sampling is infeasible (Parasuraman et al., 2005; Baber, 2019). This approach aligns with prior FinTech and e-service quality studies in emerging markets, where infrastructural limitations, incomplete customer records, and confidentiality barriers necessitate non-probability sampling (Yeboah-Boateng & Boohene, 2015; Venkatesh et al., 2016).

Accordingly, convenience sampling enabled meaningful and contextually grounded data collection from active users of FinTech payment platforms within Savings and Loans Companies, aligning with methodological precedents in FinTech, mobile money, and digital financial inclusion research.

Data were collected at selected branch locations of participating Savings and Loans Companies across the Accra Metropolis. Field assistants approached customers in banking halls and waiting areas after they completed transactions or while they waited for service. Only customers who confirmed active use of at least one FinTech payment platform offered by the participating institution were invited to participate.

Field assistants were instructed to approach customers systematically (for example, inviting every second or third eligible customer in the queue or waiting area) rather than selecting only those who appeared more approachable. This procedure helped to limit interviewer discretion and reduce the risk of selection bias. Customers who declined to participate were thanked and not replaced with “similar” respondents; instead, the next eligible person in the systematic sequence was invited. Across all branches, the overall refusal rate was approximately 5%, which is within the range typically reported in intercept-based financial services surveys. The main reasons given for refusal were lack of time and disinterest in completing a questionnaire.

Trained enumerators collected data through in-person administration of structured questionnaires at Savings and Loans Company branches. Respondents were screened to ensure they had used a Savings and Loans Company’s FinTech payment platform at least once in the preceding three months.

Ethical safeguards were observed. Participants were informed about the study’s academic purpose and could choose to participate voluntarily.

4.4. Assessment of Representativeness

Although the use of convenience-based intercept sampling limits statistical generalisability, the demographic profile of the respondents suggests that the sample is broadly consistent with the known characteristics of customers of Savings and Loans Companies in Ghana. The sample is predominantly female and mainly composed of working-age adults with secondary or tertiary education, and a high

proportion of self-employed and micro-entrepreneurs, patterns that mirror descriptive evidence from Bank of Ghana publications and sectoral reports on the Savings and Loans industry, which highlight the strong presence of women and small business clients in this segment of the financial sector. In the sample, females accounted for 67%, the mean age was approximately 35 years, and a substantial share of respondents reported being self-employed or engaged in informal or microenterprise activities.

While these comparisons do not eliminate concerns about sampling bias, they provide some reassurance that the respondents reflect the core customer base of Savings and Loans Companies institutions rather than an atypical subset. Nevertheless, we acknowledge that the findings should be generalised with caution and recommend that future studies complement intercept surveys with probability-based or multi-stage sampling designs wherever access to more comprehensive sampling frames becomes feasible.

4.5. Variables of the study

The research questionnaire was structured into two mirrored sections to capture both expectations and perceptions across the SERVQUAL dimensions. Questionnaire items were measured on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The study used 38 paired items: eight each for tangibles, reliability, assurance, and empathy, and six for responsiveness. All items were adapted from SERVQUAL instruments developed initially by Parasuraman et al (1988) and adapted for electronic service contexts by Zeithaml et al (2002), as well as Sharma et al (2024)

4.6. Data Cleaning Procedures

In total, the researchers approached and invited 420 customers to participate in the study. Of these, 400 customers agreed to participate and completed the questionnaire, representing an initial response rate of approximately 95%.

After data collection, the researchers applied a series of data screening and cleaning procedures to ensure response quality and relevance, consistent with best practices in survey-based research (Hoehle & Venkatesh, 2015; Al Mamun et al., 2025). First, eight responses were excluded because respondents indicated that they did not use FinTech payment platforms offered by their Savings and Loans Company, making them ineligible for the study. Second, six questionnaires were removed due to substantial missing data across key SERVQUAL items.

After applying these screening criteria, the final sample comprised 386 valid responses, corresponding to an effective response rate of approximately 97% of completed questionnaires. The final sample consisted predominantly of working-age adults and reflected the typical customers of Savings and Loans Companies in Ghana, including salaried workers, traders, and micro-entrepreneurs.

4.7. Factor Loadings, Validity, and Reliability of Measurement Variables

Before conducting confirmatory factor analysis (CFA), a separate exploratory factor analysis (EFA) was performed on the expectation and perception items to examine dimensionality and the initial performance of the SERVQUAL indicators. Conducting EFA separately for expectations and perceptions is consistent

with SERVQUAL gap-analytic logic and helps ensure that both item sets independently reflect the intended five-factor structure.

For expectation items, the majority loaded clearly on their respective SERVQUAL dimensions. However, two items, ERE7 and ERE8, with factor loadings of 0.44 and 0.42, respectively, were removed from the responsiveness construct. Item ETA9, with a factor loading of 0.43 under the tangibles construct, was also removed. Similarly, most perception items showed strong factor loadings. However, PRE7 and PRE8, with factor loadings of 0.41 and 0.43, respectively, were also removed under the Responsiveness construct. Item PTA9, with a factor loading of 0.45 under the tangibles construct, was also removed. We removed these items because their factor loadings fell below the recommended threshold of 0.50 (Hair et al., 2019). Many items have factor loadings exceeding 0.7, which Kline (2016) notes as an indication of strong indicators. Table 3 reports the resulting factor loadings, CR, and AVE values for the refined expectations and perceptions scales. From Table 3, the Cronbach's alpha coefficients for the SERVQUAL dimensions exceeded the recommended threshold of 0.70 (Hair et al, 2019). Most values exceeded 0.90, indicating excellent internal consistency. The composite reliability (CR) value for each dimension also exceeded 0.70, confirming construct stability. Table 3 shows that the Average Variance Extracted (AVE) for the dimensions exceeded the 0.50 threshold (Fornell & Larcker, 1981). This indicates that each dimension explained a substantial proportion of variance in its respective indicator; hence, convergent validity was established. After item screening, subsequent CFA results showed improvements in composite reliability (CR) and average variance extracted (AVE) for both the expectations and perceptions models. These improvements indicate stronger convergent validity and internal consistency, confirming that the refined measurement model captures service quality constructs more effectively without narrowing construct coverage or altering the underlying SERVQUAL framework.

4.7.1. Discriminant Validity

From Tables 4A and 4B, the square root of the AVE for each dimension was greater than the corresponding inter-construct correlations. This confirms that the dimensions were empirically distinct. Thus, discriminant validity is established using the Fornell- Larcker criteria (Fornell & Larcker, 1981). This provides strong evidence that the SERVQUAL model dimensions capture unique aspects of service quality expectations and perceptions within the FinTech payment platform context.

Table 4A: Fornell–Larcker Discriminant Validity (Expectations)

Construct	Tangibles	Reliability	Responsiveness	Assurance	Empathy
Tangibles	0.736				
Reliability	0.68	0.749			
Responsiveness	0.64	0.69	0.778		
Assurance	0.70	0.74	0.72	0.843	
Empathy	0.66	0.67	0.69	0.71	0.753

Table 4B: Fornell–Larcker Discriminant Validity (Perceptions)

Construct	Tangibles	Reliability	Responsiveness	Assurance	Empathy
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Tangibles	0.740				
Reliability	0.67	0.723			
Responsiveness	0.62	0.66	0.790		
Assurance	0.69	0.71	0.70	0.849	
Empathy	0.64	0.65	0.67	0.70	0.724

Non-Response Bias

To check for non-response bias, we used a wave analysis technique (Armstrong & Overton, 1977). The research participants were divided into two groups: early and late responders, based on the timing of their responses. An independent-samples t-test was then performed on the five SERVQUAL dimensions for both expectation and perception measures. Tables 5A and 5B show no statistically significant differences ($p > 0.05$) between early and late respondents across all dimensions, in both expectation and perception. This suggests that non-responsiveness bias is unlikely to pose a significant threat to the validity of the study results. Therefore, the sample of respondents can be considered a representation of the target population of FinTech payment platform users in Savings and Loans Companies in Accra Metropolis.

Common Method Bias

Harman's single-factor test was conducted to address potential common-method bias. All SERVQUAL items (expectations and perceptions measures) were loaded into an exploratory factor analysis using an unrotated extraction method. Table 6 shows that the first factor accounted for 45.5% of the variance, below the 50% threshold. According to Hair et al. (2019), this suggests that no single factor dominates, reducing concerns about common method bias.

As shown in Table 10, the inclusion of a common latent factor resulted in only negligible changes in standardised factor loadings for both the expectation and perception measurement models, with all absolute differences remaining well below the conservative threshold of 0.20, which has been widely used in the methodological literature to indicate substantive common method effects (Podsakoff et al., 2003; Williams et al., 2010). This shows that the substantive pattern of relationships among constructs remains stable after accounting for potential method variance, providing evidence that common method bias is unlikely to influence the study's findings materially.

4.8 Confirmatory Factor Analysis and Model Fit

To further establish the robustness of the SERVQUAL measurement model, we conducted confirmatory factor analysis (CFA) separately for the expectation and perception models using AMOS version 23 with maximum likelihood (ML) estimation (Table 11). We assessed model fit using multiple global goodness-of-fit indices consistent with established SEM reporting guidelines (Hu & Bentler, 1999; Kline, 2016).

Table 11: Confirmatory factor analysis

Index	Expectation	Perception	Recommended Values	Key Authorities
χ^2/df	2.41	2.29	≤ 3.00 (good fit); ≤ 5.00 (acceptable)	Hair et al. (2019); Kline (2016)
Comparative Fit Index (CFI)	0.928	0.934	≥ 0.90 (acceptable); ≥ 0.95 (excellent)	Hu & Bentler (1999); Hair et al. (2019)
Tucker-Lewis Index (TLI)	0.917	0.923	≥ 0.90 (acceptable); ≥ 0.95 (excellent)	Hu & Bentler (1999); Kline (2016)
Root Mean Square Error of Approximation (RMSEA) with a 90% confidence Interval	0.062 [0.058, 0.066]	0.059 [0.055, 0.064]	≤ 0.08 (acceptable); ≤ 0.06 (good)	Browne & Cudeck (1993); Hu & Bentler (1999)
Standard Root Mean Square Residual (SRMR)	0.047	0.044	≤ 0.08 (acceptable); ≤ 0.05 (good)	Hu & Bentler (1999); Hair et al. (2019)

From Table 11, all reported indices meet commonly accepted model-fit criteria, supporting the adequacy of the five-factor SERVQUAL structure for both expectation and perception measurements.

4.9 Measurement Invariance Analysis

Measurement invariance testing was conducted solely to validate the comparability of SERVQUAL constructs before the pooled service quality gap analysis. Table 12 shows that the SERVQUAL measurement model demonstrates configural and metric invariance across gender groups ($\Delta CFI = 0.002$), supporting comparability of measurement units and the use of pooled expectation-perception gap estimates.

Table 12: Multi-Group Confirmatory Factor Analysis (MG-CFA) Results (Gender Groups)

Invariance Model	χ^2/df	CFI	TLI	RMSEA (90% CI)	SRMR	ΔCFI
Configural	2.38	0.926	0.915	0.061 [0.057, 0.065]	0.048	—
Metric	2.42	0.924	0.916	0.062 [0.058, 0.066]	0.050	0.002

4.10 Data Analysis Procedures

The study compared customers' expectation scores (E) and perception scores (P) across the five SERVQUAL dimensions. The skewness and kurtosis values for all five dimensions fell within the acceptable range of -2 to +2 (George & Mallery, 2010). Gravetter and Wallnau (2014) also argue that when skewness and kurtosis values fall within this range, violations of normality assumptions are minimal, allowing the use of parametric tests. A paired-samples t-test was employed to determine whether the mean difference in expectations and perceptions was statistically significant. Cohen's d score was calculated to evaluate the magnitude of the expectation-perception gap (small = 0.2, medium = 0.5, large = 0.8). The analysis complements statistical differences by assessing the practical relevance of the gaps, as recommended for service quality research (Cohen, 1988; Pallant, 2020).

5. Results of the Study

This section presents customers' socio-demographic information, a service quality gap analysis, and a paired-samples correlation analysis.

5.1. Socio-Demographic data of customers

Table 7 shows that the respondents' average age is 35. This suggests customers are likely in their prime working years, when convenience and efficiency in financial transactions are highly valued. Table 7 shows that 67% of the respondents are female, and 33% are male. This indicates a higher presence of female customers. This reflects the higher number of females than males in the country (Population and Housing Census, 2020). Table 7 shows that 52% of the respondents are married, while 48% are single. This suggests that married customers are more likely to use FinTech payment platforms, which are well-suited to support family-oriented financial needs. Table 7 shows that most respondents have completed the WASSCE/SSSCE (39%), followed by those with a first-degree qualification (24%). 16% of respondents were BECE holders, 14% were HND/Diploma holders, and 3% were master's degree holders. 1% and 3% have other qualifications, and 1% and 3% have no qualifications, respectively. This indicates a varied educational background among customers. Table 7 shows that the respondents' income levels are somewhat evenly distributed, with 35% at a low level, 32% at an average level, and 33% at a high level. This suggests that a FinTech payment platform should cater to a diverse range of financial capabilities. Table 7 also shows that most respondents are self-employed (62%), followed by private employees (25%), government employees (10%), and unemployed individuals (3%). This suggests that most customers are self-employed. Also, most self-employed (55.75%) have employees, while 44.22% do not. This indicates that many customers manage their businesses with employees.

5.2. Service Quality Gap Analysis

The table below shows the service quality gaps, t-test statistics, significance levels, and Cohen's d (effect size)

Table 8: Summary of SERVQUAL Gap Analysis

Dimension	Expectation Mean (SD)	Perception Mean (SD)	Mean Gap (E – P)	95% CI (Gap)	Cohen's <i>d</i>	95% CI (<i>d</i>)	t-value	p-value	Effect Size
Tangibles	6.025 (0.804)	5.887 (0.859)	0.138	[0.076, 0.199]	0.22	[0.12, 0.32]	4.381	0.000	Small
Reliability	6.041 (0.851)	5.872 (0.934)	0.169	[0.086, 0.251]	0.20	[0.10, 0.30]	4.026	0.000	Small
Responsiveness	6.064 (0.838)	5.843 (0.973)	0.221	[0.136, 0.305]	0.26	[0.16, 0.36]	5.152	0.000	Small–Moderate
Assurance	6.213 (0.873)	6.036 (0.980)	0.177	[0.104, 0.251]	0.24	[0.14, 0.34]	4.773	0.000	Small
Empathy	6.033 (0.837)	5.887 (0.926)	0.146	[0.079, 0.213]	0.22	[0.12, 0.32]	4.302	0.000	Small

Table 8 shows statistically significant gaps across all five service quality dimensions, with responsiveness showing the largest gap and indicating dissatisfaction with the speed and efficiency of support services. In addition to reporting mean expectation–perception gaps, we assessed effect sizes using Cohen's *d* for paired samples and reported 95% confidence intervals to support interpretation of practical significance. Across SERVQUAL dimensions, the confidence intervals for *d* did not include zero, indicating that the observed gaps are not only statistically significant but also consistently directional. Although effect sizes are generally small, responsiveness shows the largest effect size and the widest confidence interval, reinforcing its salience as the most pronounced service quality gap.

Hypotheses H1–H5 examine whether significant negative expectation–perception gaps exist for each SERVQUAL dimension. Paired-sample *t*-tests and Cohen's *d* values were used to evaluate these gaps.

H1 proposed a significant positive E-P service shortfall between expectations and perceptions of tangibles.

Results show a statistically significant gap ($M_{\text{gap}} = 0.1376$, $t = 4.381$, $p < .001$), indicating that customers perceived the physical and interface features of FinTech platforms to fall short of their expectations. H1 is supported.

H2 proposed a significant negative reliability gap. A significant gap was observed ($M_{\text{gap}} = 0.1687$, $t = 4.026$, $p < .001$), demonstrating that customers perceived inconsistencies in transaction accuracy, system dependability, and error-free operation. H2 is supported.

H3 predicted that responsiveness would show a significant positive E – P service shortfall. Responsiveness recorded the largest gap among all SERVQUAL dimensions ($M_{\text{gap}} = 0.2206$, $t = 5.152$,

$p < .001$). Customers reported unmet expectations regarding support speed, timeliness of issue resolution, and service-recovery efficiency. H3 is strongly supported.

H4 proposed a significant positive E – P service shortfall in assurance. Findings confirm a statistically significant gap ($M_{\text{gap}} = 0.1775$, $t = 4.773$, $p < .001$), reflecting customer concerns about system security, trustworthiness, and competence. H4 is supported.

H5 proposed a significant positive E – P service shortfall in empathy. Empathy showed a meaningful positive E – P service shortfall ($M_{\text{gap}} = 0.1461$, $t = 4.302$, $p < .001$), indicating that customers perceived limited personalised attention or support from the FinTech service environment. H5 is supported.

5.3 Expectation – Perception Correlations

The paired-samples correlation analysis examines the strength and direction of the relationship between customers' expectations and their actual perceptions of FinTech service quality for each SERVQUAL dimension. A significant positive correlation indicates that as customers' expectations increase, their perceptions also tend to increase, and vice versa.

Table 9: Results of Paired Sample Correlation

Dimension	Correlation (r)	Significance (p-value)	interpretation
Tangibles	0.726	0.000	Strong
Reliability	0.578	0.000	Moderate
Responsiveness	0.577	0.000	Moderate
Assurance	0.695	0.000	Strong
Empathy	0.718	0.000	Strong

Paired-sample correlations revealed strong positive relationships between expectations and perceptions for tangibles ($r = .726$), assurance ($r = .695$), and empathy ($r = .718$), and moderate correlations for reliability ($r = .578$) and responsiveness ($r = .577$). The results indicate that customers with higher expectations also reported higher perceptions, although the gaps remained significant.

6. Discussion of the Study Findings

This study examined service quality gaps in FinTech payment platforms used by Savings and Loans Companies in Accra Metropolis using the SERVQUAL framework. The study formulated five hypotheses, each corresponding to a SERVQUAL construct.

H1 predicted a significant positive E – P service shortfall in tangibles, which was supported. Although FinTech platforms generally provide accessible and functional interfaces, customers perceived these features as below expectations. This finding aligns with results in Iran and Malaysia, where interface usability and visual app appeal lag behind user expectations (Sakhei et al., 2014; Amin, 2016). However,

unlike studies in Ethiopia and Oman, where tangibles were the most considerable concern (Etana, 2021; Amanda & Devesh, 2017), the Ghanaian context showed tangibles as the smallest gap. The difference reflects Ghanaian users' familiarity with simple USSD menus and basic mobile money features, meaning expectations for interface sophistication are relatively modest. Thus, tangibles remain relevant in the SERVQUAL model, but their weighting appears context-specific in emerging markets with lower digital literacy and simpler interface norms.

H2 was supported, showing significant reliability gaps. This reinforces SERVQUAL's emphasis on dependable and accurate service delivery. Consistent with findings from Bangladesh and Nigeria, Users in Ghana expressed concerns about transaction consistency, system uptime, and delays in reversal processing (Islam et al., 2020; Yusuf et al., 2020). Reliability gaps in this study highlight vulnerabilities in Ghana's FinTech ecosystem, particularly in the mobile money infrastructure on which savings and loans companies depend. Compared to more advanced digital markets where reliability gaps are shrinking, Ghana continues to experience systemic issues linked to telecommunications networks and interoperability challenges. This suggests that in emerging markets, reliability should be conceptualised not only at the institutional level but also at the ecosystem level, as external technical failures shape customers' perceptions of a provider's reliability.

H3 was strongly supported, with responsiveness showing the largest gap between expectations and perceptions. This mirrors consistent findings from India, Nigeria, and Bangladesh, where low issue resolution and inadequate support are major sources of dissatisfaction (Sharma, 2021; Yusuf et al., 2020). Ghana's Savings and Loans Companies face similar challenges, including delays in resolving failed transfers and limited real-time customer support. Unlike commercial banks, which often have dedicated digital support units, Savings and Loans Companies operate with smaller teams and usually use manual customer service processes. This contextual difference intensifies expectations and widens responsiveness gaps. From a theoretical standpoint, the results suggest that in FinTech environments, responsiveness is not merely a measure of staff willingness but a function of system speed, automated redress mechanisms, and customer service capacity. This reinforces the argument that SERVQUAL's responsiveness dimensions need to be adapted for digital financial services.

H4 was supported, confirming significant assurance gaps. In digital payment environments, assurance encompasses cybersecurity, system trust, staff competence, and perceived financial safety. Similar assurance concerns have been reported in Tunisia and Jordan (Zouari & Abdelhedi, 2021; Al-Hawary & Al-Smeran, 2017), and fear of fraud and data breaches shapes trust in digital platforms.

In the Ghanaian context, the assurance gap is further complicated by varying levels of digital literacy. Customers with limited familiarity with digital finance may interpret system delays or unclear feedback as signs of risk, thereby intensifying perceived insecurity. This highlights a psychological dimension of assurance, trust, and vulnerability which may not surface in more digitally mature markets. Thus, this study contributes to theory by suggesting that, in developing economies, assurance must integrate cybersecurity literacy and customer confidence-building mechanisms, extending beyond SERVQUAL's traditional conceptualisation.

H5 was also supported, showing a significant empathy gap. In digital contexts, empathy reflects communication clarity, support availability, and perceived care rather than face-to-face interaction. Similar empathy gaps have been documented in Mauritius and Malaysia (Vencataya et al., 2019; Lee & Moghavvemi, 2015). For Savings and Loans Companies, empathy challenges arise because digital services are often complemented by human assistance. Many customers require staff support to complete USSD transactions or troubleshoot errors. When this assistance is inconsistent, perceived empathy suffers. This hybrid digital-human dependency suggests a need to adapt SERVQUAL in contexts where customers rely on interpersonal mediation to navigate digital services.

All the findings reveal a coherent service-quality pattern rather than five isolated hypothesis outcomes. Responsiveness recorded the largest shortfall, indicating that transaction support and problem resolution are the most visible weaknesses. Assurance and reliability formed the next tier, reflecting linked concerns about trust, security, accuracy, and system dependability. Tangibles and empathy showed smaller but statistically significant shortfalls. The pattern suggests that customers prioritise timely recovery, dependable execution, and confidence in technology-mediated transactions more strongly than interface appearance or personalised attention in this context.

This study assessed the service quality of FinTech payment platforms in Savings and Loans Companies in Accra Metropolis using SERVQUAL. All five dimensions showed statistically significant positive E-P shortfalls, meaning that expectations exceeded perceptions. Responsiveness had the largest shortfall, followed by assurance and reliability, while tangibles and empathy had smaller but significant shortfalls. The theoretical contribution is a contextual validation and stress test of SERVQUAL in a semi-formal, hybrid digital-human financial setting. The practical contribution is a clear priority order for service improvement: accelerate service recovery, strengthen transaction dependability, and build customer confidence. The policy contribution is evidence that can inform measurable consumer-protection and operational-resilience benchmarks for FinTech-enabled payment services.

The findings also indicate that digital-literacy support, ecosystem reliability, and trust vulnerability may shape how customers experience the traditional SERVQUAL dimensions. Future studies should test these factors formally rather than treating them as established extensions in the present model.

The findings advance understanding of FinTech service quality by showing that, in addition to traditional SERVQUAL dimensions, contextual factors such as digital literacy support, ecosystem reliability and trust vulnerability may shape user experiences in semi-formal financial institutions. These insights contribute to ongoing discussions about adapting traditional service quality models to technology-mediated financial environments, especially in developing economies.

Overall, the study demonstrates that although FinTech payment platforms enhance accessibility and convenience, significant service quality challenges remain, particularly in system dependability, speed of issue resolution and perceived security. Addressing these gaps is essential to sustain customer trust, strengthen financial inclusion, and improve digital service delivery in the Savings and Loans sector.

7. Implications of the study

7.1. Implications for Savings and Loans Companies

The findings of this study have important implications for both practice and policy in Ghana's Savings and Loans Companies sector, particularly regarding the regulation and oversight of FinTech-enabled payment services. These implications are grounded in the observed expectation-perception gaps across the SERVQUAL dimensions, with responsiveness, reliability, and assurance emerging as the most pronounced areas of service shortfall.

7.2. Implications for FinTech Partners

From a practice perspective, the large responsiveness gap suggests that customers' expectations for the speed of service recovery and complaint handling are not consistently met. For Savings and Loans Companies and their FinTech partners, this highlights the importance of formalising and communicating clearer internal service-level standards for handling digital transaction failures. For instance, institutions may benefit from adopting explicit benchmarks for acknowledging customer complaints within a short, defined time window and resolving common transaction issues, such as failed debits or delayed reversals, within 24 hours, except in cases requiring extended investigation. While implementing such benchmarks may entail additional operational costs, such as staffing digital support units or deploying automated ticketing systems, the potential benefits include reduced customer frustration, fewer complaints escalated to regulators, and improved trust in digital payment channels.

The reliability gap underscores persistent concerns about transaction accuracy, system stability, and consistency of service delivery. In practical terms, this points to the need for Savings and Loans Companies to strengthen backend integration with their FinTech partners, particularly through improved transaction reconciliation processes, real-time confirmation mechanisms, and proactive system monitoring. Although investments in operational resilience may increase short-term costs, they can reduce manual error correction, lower complaint volumes, and enhance institutional credibility over time. These findings reinforce the importance of reliability as a core operational capability in technology-mediated financial services, especially for institutions serving customers who depend heavily on mobile money and USSD-based platforms.

7.3. Implications for Regulators

The assurance gap reflects heightened customer sensitivity to issues of security, fraud prevention, and institutional competence. Beyond technical safeguards, the results suggest that Savings and Loans Companies can enhance perceived assurance by communicating security measures more clearly, adopting transparent dispute-resolution procedures, and demonstrating staff competence in handling digital service issues. Such measures are relatively low-cost but can substantially improve customer confidence, particularly in semi-formal financial institutions where trust plays a central role in customer relationships.

From a policy perspective, these findings are directly relevant to the Bank of Ghana's mandate to promote safe, efficient, and reliable payment systems. Rather than introducing new regulatory directions, the evidence from this study supports operationalising existing regulatory frameworks governing payment service providers, electronic money issuers, and FinTech partnerships. In particular, the observed responsiveness gaps suggest scope for the BoG to encourage, or, where appropriate, require, licensed providers and partner institutions to publish and adhere to minimum service-quality benchmarks for complaint acknowledgement and resolution. Such benchmarks would complement BoG's existing consumer protection and payment systems oversight objectives by translating regulatory principles into customer-observable service standards.

Similarly, the reliability and assurance gaps align with BoG's emphasis on operational resilience and system integrity within the digital payments ecosystem. The findings support policy efforts to strengthen reporting and monitoring of service availability, failed-transaction rates, reconciliation controls, and incident-response timelines in FinTech institution integrations. Encouraging routine disclosure of these indicators would directly address the service reliability concerns identified in this study while remaining consistent with the BoG's supervisory role.

Finally, the Regulatory Sandbox framework provides an essential mechanism through which BoG can test not only the technical functionality of new FinTech solutions but also their service recovery and customer-support capabilities before large-scale deployment. Incorporating responsiveness and reliability benchmarks, such as transaction reversal timelines and complaint-escalation protocols, into sandbox testing criteria would help ensure that innovation in digital payments is accompanied by adequate consumer protection and service quality safeguards.

8. Limitations and directions for future research

This study is limited by its focus on Savings and Loans Companies in a single metropolitan area, which may not fully represent diverse digital service experiences across Ghana. Future research may extend the SERVQUAL framework by formally testing additional context-specific constructs such as digital literacy support and ecosystem reliability. Comparative studies across multiple African markets may also deepen understanding of how FinTech service quality evolves across different regulatory and infrastructural environments.

This study was deliberately designed to examine service quality gaps arising from the use of FinTech payment platforms within Savings and Loans Companies, using the SERVQUAL expectation–perception framework. Future research may therefore build on the gap profiles identified here by explicitly examining how specific SERVQUAL dimensions, particularly responsiveness, reliability, and assurance, translate into customer satisfaction, trust formation, or continuance intention in FinTech-enabled financial services. Such extensions would help connect diagnostic service quality assessments with behavioural outcomes while preserving the conceptual integrity of the SERVQUAL framework.

The study employed a convenience sampling strategy, which limits the statistical generalisability of the findings beyond the sampled respondents. While this approach was appropriate given the absence of

accessible customer lists, confidentiality constraints, and the transactional nature of FinTech payments within Savings and Loans Companies, it may introduce selection bias by over-representing customers who are more accessible or more willing to participate in surveys. Consequently, interpret the results as reflecting the perceptions of active users encountered during data collection rather than as nationally representative estimates. Future studies could address this limitation by adopting stratified or multi-stage sampling approaches, in collaboration with financial institutions or industry associations, to enhance representativeness across customer segments.

From an ethical perspective, the study adhered to established research ethics standards. Participation was voluntary, informed consent was obtained, and respondents were assured of anonymity and confidentiality. No personally identifiable information or account-related data were collected, and responses were used solely for academic purposes. Nevertheless, future studies that incorporate behavioural or administrative data should pay particular attention to data protection, informed consent, and secure data handling, especially in contexts involving digital financial transactions.

9. Author Declaration

9.1. Ethics Approval and Consent to Participate

9.2. Ethical Approval Statement

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. The School of Graduate Studies at the Accra Institute of Technology, Accra, issued an introductory letter and presented it to the management of selected Savings and Loans Companies in Ghana. The management of these institutions reviewed the study objectives and granted formal permission to collect data from customers. As the university did not require formal Institutional Review Board (IRB) clearance for this study, an ethics reference number is not applicable. All participants were fully informed about the study's nature and purpose, and participation was voluntary. The researchers obtained informed consent and strictly maintained participant confidentiality and anonymity throughout the research process.

9.3. Informed Consent Statement

After the School of Graduate Studies at the Accra Institute of Technology approved the introductory letter, management of the selected Savings and Loans Companies granted permission for their staff to participate in the study. All participants were adults and were informed about the purpose, procedures, and voluntary nature of the research. The researchers obtained informed consent verbally before participation, as the institutional setting and the nature of data collection made verbal consent the most practical approach. The research questionnaire included a clear statement that “All information provided in this study will be treated as confidential, and your anonymity is assured” This ensured that participants were fully aware of their rights and protections in accordance with the ethical principles outlined in the Declaration of Helsinki. No minors were involved in the study.

9.4. Consent for Publication

All participants provided informed consent for the anonymous use of their responses and data in publications arising from this research.

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References

- Al-Azzam, A. F. M. (2015). The impact of service quality dimensions on customer satisfaction: A field study of Arab Bank in Irbid City, Jordan. *European Journal of Business and Management*, 7(15), 45–53.
- Al-Hawari, M., & Ward, T. (2006). The effect of automated service quality on Australian banks' financial performance and the mediating role of customer satisfaction. *Marketing Intelligence & Planning*, 24(2), 127–147. <https://doi.org/10.1108/02634500610653991>
- Al-Hawary, S. I. S., & Al-Smeran, W. F. (2017). The impact of electronic service quality on customer satisfaction in Islamic banks in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), 170–188.
- Ali, S., Khalid, U., & Bilal, H. (2020). Service quality dimensions and customer satisfaction: Evidence from microfinance institutions in Pakistan. *International Journal of Bank Marketing*, 38(2), 389–408.
- Alnaser, F. M. I., Ghani, M. A., & Rahi, S. (2017). Service quality dimensions and customer satisfaction in Islamic banks in Palestine. *Journal of Islamic Marketing*, 8(3), 452–472. <https://doi.org/10.1108/JIMA-05-2015-0038>
- Amin, M. (2016). Internet banking service quality and its implications on e-customer satisfaction and e-customer loyalty. *International Journal of Bank Marketing*, 34(3), 280–306. <https://doi.org/10.1108/IJBM-10-2014-0139>
- Ananda, S., & Devesh, S. (2017). Service quality dimensions and customer satisfaction: Empirical evidence from the retail banking sector in Oman. *Total Quality Management & Business Excellence*. Advance online publication. <https://doi.org/10.1080/14783363.2017.1393330>
- Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of FinTech: A new post-crisis paradigm? *Georgetown Journal of International Law*, 47(4), 1271–1319.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 14(3), 396–402. <https://doi.org/10.1177/002224377701400320>
- Asante, S., & Shaibu, M. (2022). FinTech adoption and financial inclusion in Ghana: Evidence from Savings and Loans Companies. *African Journal of Accounting, Auditing and Finance*, 11(2), 217–233.
- Asongu, S. A., & Nwachukwu, J. C. (2018). Comparative human development thresholds for absolute and conditional catch-up in education and inclusive institutions. *Technological Forecasting and Social Change*, 129, 183–193.
- Avom, D., Bangaké, C., & Ndoya, N. (2023). Digital finance and financial inclusion in Africa: What role for trust? *Journal of African Business*, 24(1), 54–74.
- Baabdullah, A. M., Alalwan, A. A., Rana, N. P., Kizgin, H., & Patil, P. (2019). Consumer use of mobile banking in Saudi Arabia: Toward an integrated model. *International Journal of Information Management*, 44, 38–52. <https://doi.org/10.1016/j.jinfomgt.2018.09.002>
- Bank of Ghana. (2020). *Annual report: Performance of Savings and Loans Companies*. Bank of Ghana.
- Bank of Ghana. (2021). *Regulatory sandbox framework for financial innovation*. Bank of Ghana.

- Bank of Ghana. (2023). *FinTech industry report*. Bank of Ghana.
- Boateng, H., Molla, A., Heeks, R., & Kosack, S. (2016). Mobile banking adoption in Ghana: A framework for user satisfaction and trust. *Information Development*, 32(4), 812–824.
- Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Sage.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). John Wiley & Sons.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56(3), 55–68. <https://doi.org/10.1177/002224299205600304>
- David-West, O., Iheanachor, N., & Umukoro, I. O. (2019). Digital financial inclusion in Africa: The role of reliability and trust. *Journal of Financial Services Marketing*, 24(1–2), 12–27.
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the FinTech revolution*. World Bank.
- Dzokoto, V., & Appiah, E. (2021). Mobile money and financial inclusion in Ghana: Customer trust and service quality issues. *Journal of African Business*, 22(4), 517–534.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference*, 17.0 update (10th ed.). Pearson.
- Gravetter, F. J., & Wallnau, L. B. (2014). *Essentials of statistics for the behavioural sciences* (8th ed.). Wadsworth.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). *Multivariate data analysis* (7th ed.). Pearson Education.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modelling (PLS-SEM)* (2nd ed.). Sage.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Ighomereho, O. S., Isibor, A. A., & Eromafuru, E. E. (2022). E-service quality and customer satisfaction in Nigerian FinTech firms. *African Journal of Economic and Management Studies*, 13(4), 789–807. <https://doi.org/10.1108/AJEMS-07-2021-0315>
- Islam, R., Ahmed, S., Rahman, M., & Al Asheq, A. (2020). Service quality dimensions and customer satisfaction in private banks of Bangladesh. *Journal of Asian Finance, Economics and Business*, 7(10), 823–829. <https://doi.org/10.13106/jafeb.2020.vol7.n10.823>
- Joshi, C. (2021). Service quality and customer satisfaction: Evidence from commercial banks in Nepal. *International Journal of Bank Marketing*, 39(3), 351–370.
- Kant, R., & Jaiswal, D. (2017). The impact of perceived service quality dimensions on customer satisfaction: An empirical study on public sector banks in India. *International Journal of Bank Marketing*, 35(3), 411–430. <https://doi.org/10.1108/IJBM-04-2016-0051>
- Khamis, F. M., & AbRashid, R. (2018). Service quality and customer satisfaction in Tanzania's Islamic banks: A case study of the People's Bank of Zanzibar. *Journal of Islamic Marketing*. Advance online publication. <https://doi.org/10.1108/JIMA-09-2016-0068>

- Kline, R. B. (2016). Principles and practice of structural equation modelling (4th ed.). Guilford Press.
- Ladhari, R. (2009). A review of twenty years of SERVQUAL research. *International Journal of Quality and Service Sciences*, 1(2), 172–198.
- Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of Internet and mobile banking. *Journal of Business Research*, 69(7), 2432–2439.
- Lee, S. P., & Moghavvemi, S. (2015). The dimensions of service quality and their impact on customer satisfaction, trust, and loyalty. *Asian Journal of Business and Accounting*, 8(2), 91–121.
- Lin, H. F. (2007). Measuring online banking service quality from a customer's perspective. *Journal of Services Research*, 7(1), 43–60.
- Marković, S., Dorčić, J., & Katušić, G. (2015). Service quality measurement in the Croatian banking sector: Application of the SERVQUAL model. In *Proceedings of the MIC 2015 Conference* (pp. 209–225). University of Rijeka.
- Malhotra, N. K., Nunan, D., & Birks, D. F. (2017). *Marketing research: An applied approach* (5th ed.). Pearson.
- Narteh, B. (2018). Service quality and customer satisfaction in Ghanaian banks: Evidence from SERVQUAL and BSQ models. *Journal of African Business*, 19(4), 1–19.
- Osabutey, E. L. C., & Jackson, T. (2024). Mobile money and financial inclusion in Africa: Emerging themes, challenges, and policy implications. *Technological Forecasting and Social Change*, 202, 123339. <https://doi.org/10.1016/j.techfore.2024.123339>
- Pallant, J. (2020). SPSS survival manual: A step-by-step guide to data analysis using IBM SPSS (7th ed.). McGraw-Hill Education.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.
- Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213–233.
- Pham, T.-T. T., & Ho, J. C. (2015). The effects of product-related, personal-related factors and attractiveness of alternatives on consumer adoption of NFC-based mobile payments. *Technology in Society*, 43, 159–172. <https://doi.org/10.1016/j.techsoc.2015.05.004>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>
- Sharma, G. (2021). Investigating the determinants of customer satisfaction in digital payments. *International Journal of Bank Marketing*, 39(1), 45–66.
- Sharma, V., Singh, N., & Sharma, A. (2024). Evaluating FinTech payment services quality using SERVQUAL and TAM: Evidence from India. *Journal of Financial Services Marketing*, 29(1), 65–81.
- Rahaman, M. A., Ali, M. J., Kejing, Z., Taru, R. D., & Mamoon, Z. R. (2020). Investigating the effect of service quality on bank customers' satisfaction in Bangladesh. *The Journal of Asian Finance, Economics and Business*, 7(10), 823–829. <https://doi.org/10.13106/jafeb.2020.vol7.no10.823>
- Vencataya, L., Pudaruth, S., Juwaheer, R. T. D., Dirpal, G., & Sumodhee, N. M. Z. (2019). Assessing the impact of service quality dimensions on customer satisfaction in commercial banks of Mauritius. *Studies in Business and Economics*, 14(1), 259–270.
- Wang, C.-K., Masukujjaman, M., Alam, S. S., Ahmad, I., Lin, C.-Y., & Ho, Y.-H. (2023). The effects of service quality performance on customer satisfaction for non-banking financial institutions in an

- emerging economy. *International Journal of Financial Studies*, 11(1), Article 33. <https://doi.org/10.3390/ijfs11010033>
- Williams, L. J., Hartman, N., & Cavazotte, F. (2010). Method variance and marker variables: A review and comprehensive CFA marker technique. *Organisational Research Methods*, 13(3), 477–514. <https://doi.org/10.1177/1094428110366036>
- Yusuf, T. O., Okafor, L. I., & Suleiman, A. (2020). Service quality and customer satisfaction in Nigerian electronic banking. *International Journal of Bank Marketing*, 38(5), 1119–1134.
- Zouari, G., & Abdelhedi, M. (2021). Customer satisfaction in Islamic banks: Testing the SERVQUAL model. *Journal of Islamic Marketing*, 12(3), 534–550. <https://doi.org/10.1108/JIMA-09-2019-0183>