

EXAMINING DETERMINANTS OF CUSTOMER SATISFACTION IN MOBILE MONEY SERVICES SUB-SECTOR: EVIDENCE FROM KITWE, ZAMBIA

Bruce Mwiya^{1*}, Patricia Phiri², Timmy Kasonde², Bernadette Kaulungombe³,
Maureen Kanchebele-Sinyangwe¹

¹ Kwame Nkrumah University, Zambia, Email: mwiya@gmail.com

² Copperbelt University, Zambia, Email: patriciaphiri772@gmail.com

² Copperbelt University, Zambia, Email: timmykasonde95@gmail.com

³ Northrise University, Zambia, Email: bernadettekaulungombe@gmail.com

¹ Kwame Nkrumah University, Zambia, Email: kabwema@yahoo.com

*Correspondence: Bruce Mwiya, Email: mwiya@gmail.com; ORCID: <https://orcid.org/0000-0002-6570-4637>

Abstract

This study examines the determinants of customer satisfaction in the mobile money services sub-sector in Kitwe, Zambia, focusing on service quality, service charges, perceived value, and security. Using a quantitative cross-sectional design, primary data were collected from 392 mobile money users, selected through systematic sampling, and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results indicate that service quality, perceived value, and security have significant positive effects on customer satisfaction, while service charges show no significant effect. Overall, the findings suggest that customers prioritise service performance, value, and transaction security when evaluating mobile money services, consistent with expectation-confirmation theory. The non-significant effect of service charges extends the theory by indicating that when an attribute is perceived as largely invariant across competing providers, as is the case with mobile money transaction fees in Zambia, it ceases to function as a meaningful basis for confirmation or disconfirmation of expectations. The study contributes to the limited literature on digital financial services in Zambia and provides practical insights for mobile money providers and policymakers seeking to enhance customer satisfaction through improved service delivery, stronger cybersecurity measures, and enhanced value creation strategies. These recommendations are essential for improving adoption, usage continuity, and competitiveness in the mobile money sector in developing economies. Future research is encouraged to explore additional behavioural and contextual factors across different regions.

Keywords: Mobile money services, customer satisfaction, service quality, perceived value, security.

Published online: 27 September 2026

1.0 INTRODUCTION

Mobile money services have emerged as an important financial innovation that promotes financial inclusion by providing affordable and convenient financial services to both banked and unbanked populations (Gyamerah & Tetteh, 2024). In many developing countries, mobile money has become an effective alternative to traditional banking services, particularly among low-income households and individuals residing in underserved areas (Apeti, 2023). The widespread ownership of mobile phones has significantly contributed to the growth of digital financial services, allowing millions of people to access financial services without the need for conventional bank accounts (Gyamerah & Tetteh, 2024; Osabutey & Jackson, 2024).

Globally, mobile money services have experienced remarkable growth. According to the Global System for Mobile Communications Association (GSMA), there were over 1.75 billion registered mobile money accounts worldwide and more than US\$1.4 trillion in annual transaction values (GSMA, 2026). Sub-Saharan Africa remains the leading region in mobile money adoption, accounting for over 70% of global mobile money accounts and transactions (GSMA, 2024). The increasing use of mobile money services has enhanced financial inclusion, improved access to payments, and facilitated economic participation among previously excluded populations.

In Zambia, the growth of mobile phone penetration and digital financial services has significantly transformed the financial sector (Mwiya et al., 2017). The country was among the early adopters of mobile money services, with the first services introduced in 2009. The major mobile network operators, namely MTN Zambia, Airtel Zambia, and Zamtel, have continued to expand mobile money services throughout the country. According to the Zambia Information and Communications Technology Authority (ZICTA, 2023), MTN held approximately 32% of the mobile market share, Airtel accounted for about 48%, while Zamtel controlled nearly 15% of the market. Furthermore, recent reports indicate that mobile financial services account ownership among adults in Zambia exceeds 60%, demonstrating substantial progress in financial inclusion (Finscope, 2025).

The Government of Zambia has also demonstrated commitment to expanding digital financial services through initiatives such as the National Financial Inclusion Strategy, which emphasises innovation, customer-centric products, accessibility, and affordability (Bank of Zambia, 2017). Mobile money services now allow customers to transfer money, purchase airtime, pay utility bills, receive salaries, pay insurance premiums, and conduct merchant payments using mobile devices. The convenience, accessibility, timeliness, and affordability of these services have contributed to their growing adoption (Mwiya et al., 2022).

Despite these developments, mobile money services continue to face several challenges that may affect customer satisfaction. Service interruptions, network failures, transaction delays, high transaction charges, fraud risks, and security concerns remain common problems experienced by users (Mwiya et al., 2026; Putrevu & Mertzanis, 2024). In addition, customers often encounter difficulties when transacting across different mobile networks, which may negatively influence their perceptions of service quality and satisfaction.

Customer satisfaction remains an important indicator of service performance because satisfied customers are more likely to continue using services, recommend them to others, and remain loyal to service providers (Mugova et al., 2025). Previous studies conducted in Ghana, Kenya, Pakistan, Sri Lanka, and China identified factors such as service quality, convenience, security, transaction costs, customer service, and network coverage as significant determinants of customer satisfaction in mobile money services (Khan et al., 2022; Oduro et al., 2018; Sleiman et al., 2021; Twum et al., 2023). However, empirical evidence within the Zambian context remains limited, particularly in the mobile money sub-sector. Therefore, this study seeks to examine the determinants of customer satisfaction in the mobile money services sub-sector in Kitwe, Zambia. The remainder of the paper reviews the relevant literature and develops hypotheses, outlines the research methodology, presents and discusses the findings, and finally provides conclusions and recommendations for future research.

2.0 LITERATURE REVIEW

2.1 An Overview of Customer Satisfaction

Customer satisfaction remains one of the most widely studied concepts in marketing and service management because it influences customer retention, loyalty, and organisational performance. Customer satisfaction refers to the extent to which customers perceive that a product or service meets or exceeds their expectations (Oliver, 2010). According (Mwiya et al., 2022), customer satisfaction represents the consumer's emotional response following the purchase and use of a product or service. Similarly, Angelova & Zekiri (2011) define customer satisfaction as a measure of how pleased customers are with the products, services, and experiences offered by a firm.

The customer satisfaction literature has also been shaped substantially by foundational work outside the mobile money field. Fornell (1992) developed one of the earliest national customer satisfaction barometers, establishing that aggregate satisfaction is a leading indicator of firm and even economy-wide performance. Anderson and Sullivan (1993) subsequently modelled satisfaction as a function of both expectations and perceived quality, showing that disconfirmation operates as a distinct mechanism from quality perceptions alone. Mittal and Kamakura (2001) extended this line of work by demonstrating that the relationship between satisfaction and repurchase behaviour is itself moderated by customer characteristics such as demographics, a finding with direct relevance to the present study's call for testing moderating variables such as age and digital literacy. Although these theorists are not specific to mobile money, they underpin much of the satisfaction measurement tradition on which mobile-money-specific studies, including the present one, are built.

Satisfaction occurs when performance meets or exceeds expectations, whereas dissatisfaction results when performance falls below expectations (Oliver, 2014). Oktavanny & Sulistiadi (2022) further explain customer satisfaction as the customer's evaluation of the difference between expected and actual performance after using a product or service. Within the financial services sector, customer satisfaction is particularly important because satisfied customers are more likely to continue using services, recommend them to others, and remain loyal to service providers (Muhammad & Suryati, 2026). Mwiya et al. (2022) argue that customer satisfaction contributes significantly to marketing performance because it

encourages repeat purchases and strengthens long-term relationships between customers and firms.

Mobile money services have emerged as an important innovation in financial service delivery, especially in developing economies where access to conventional banking remains limited. Mobile money refers to financial services conducted through mobile devices that allow users to transfer money, make payments, purchase airtime, save funds, and access other financial services using mobile phones (Tengeh & Gahapa, 2020). According to Sabbaghi (2025), mobile money enables electronic financial transactions through mobile devices, with customer accounts linked to mobile phone numbers and supported by agent networks.

The rapid growth of mobile money services has been attributed to their convenience, accessibility, affordability, and ease of use. Aron (2018) argues that mobile money provides an efficient alternative for individuals who face challenges accessing traditional banking services. The technology has become particularly important in developing countries because it extends financial services to underserved populations.

Customer satisfaction in mobile money services has attracted considerable attention among researchers because service providers operate in highly competitive environments. Twum et al. (2023) indicate that customer satisfaction has become a central objective of mobile money providers seeking to improve service quality and maintain customer loyalty. Consequently, understanding the factors that influence customer satisfaction has become important for both researchers and practitioners. Several studies have identified various determinants of customer satisfaction in mobile money services. Mwiya (2006), Deyalage & Kulathunga (2019) and Armawan et al. (2023) identified factors such as service quality, convenience, affordability, accessibility, security, and usability as significant predictors of satisfaction. Although these studies provide useful insights, most were conducted outside Zambia, thereby limiting their applicability within the Zambian mobile money sector.

The African mobile money literature outside Zambia is considerably more developed. In Kenya, Jack and Suri (2014) demonstrated using nationally representative panel data that M-Pesa usage enabled households to share risk more effectively and smooth consumption after income shocks, establishing mobile money's welfare effects on the continent's most studied market. In Tanzania, Pallangyo (2022) examined cybersecurity vulnerabilities in mobile money transaction services, while in Ghana, Oduro et al. (2018) and Adams and Gopakumar (2023) identified service quality, affordability, and ease of transfer as key satisfaction and usage drivers. A recurring theme across these markets is cross-network interoperability: Zambia's own mobile money ecosystem has historically suffered from an inability of customers on different networks to transact directly with one another, a gap the Bank of Zambia has sought to close through the National Financial Switch, implemented in partnership with the Zambia Electronic Clearing House Limited, whose mobile payments module went live in 2020 (Mvula et al., 2020). None of the Zambian mobile money satisfaction studies cited above, including Jere and Mukupa (2018) and Mwiya et al. (2022), directly examine how interoperability, or the lack of it, shapes customer satisfaction, representing a specific contextual gap that this study is not designed to close but which future Zambian research should address.

2.2 Service Quality and Customer Satisfaction

Service quality is one of the most important determinants of customer satisfaction in service industries. Mwiya et al. (2017) define service quality as the ability of service providers to consistently meet or exceed customer expectations. Similarly, Saputra et al. (2025) argue that service quality consists of both process quality and outcome quality, which jointly influence customer perceptions. In the context of mobile money services, service quality includes reliability, responsiveness, assurance, empathy, and convenience. Alzoubi et al. (2020) define service quality as customers' overall judgment regarding the excellence of services provided compared to their expectations. When service providers deliver services efficiently, customers develop positive evaluations that increase satisfaction.

Mwiya et al. (2026) found that service quality significantly influences customer satisfaction in mobile money services because customers value prompt service delivery, network reliability, and efficient transaction processing. Similarly, Indajang et al. (2023) reported a positive relationship between service quality and customer satisfaction in mobile financial services. Empirical studies conducted in Ghana found that approximately 89% of mobile money users were satisfied with services such as convenience, affordability, and ease of money transfers (Adams & Gopakumar, 2023). These findings suggest that improving service quality can significantly enhance customer satisfaction and strengthen customer loyalty.

2.3 Security, Service Charges, and Perceived Value

Security remains a critical concern in mobile money services because financial transactions involve sensitive customer information. Bajwa et al. (2023) argue that secure transaction systems increase customer confidence and satisfaction. Pallangyo (2022) note that unauthorised access, fraud, and cybercrime continue to pose challenges within the mobile money industry.

Service charges also influence customer satisfaction because customers evaluate whether transaction costs are reasonable relative to the benefits received. Eijdenberg et al. (2026) found that affordable transaction charges encourage greater usage of mobile money services. Similarly, Mwiya et al. (2019) reported that service charges significantly influence customer satisfaction.

Perceived value refers to customers' assessment of the benefits received relative to the costs incurred when using a service (Blut et al., 2024). Juliana et al. (2022) established that perceived value positively influences customer satisfaction because customers evaluate whether services provide adequate benefits. Mwiya et al. (2019) further argue that customer perceptions significantly influence satisfaction and future behavioural intentions.

Therefore, security, service charges, and perceived value remain important determinants of customer satisfaction within mobile money services. Understanding these factors can help service providers develop strategies that improve customer experiences and enhance satisfaction levels.

2.4 Expectation-Confirmation Theory (ECT)

Expectation-Confirmation Theory (ECT), originally developed by Oliver (1980) explains customer satisfaction as a result of the comparison between customers' initial expectations and the actual performance of a product or service. The theory posits that customers form expectations before using a service, and satisfaction occurs when the perceived performance meets or exceeds those expectations.

Conversely, dissatisfaction arises when the actual performance falls below expectations (Oliver, 1980).

The theory has been extensively applied in marketing, information systems, and service management studies to explain customer satisfaction and continuance intentions. Mwiya et al. (2017) employed the theory in digital service environments and found that confirmation of customer expectations significantly influences satisfaction and future behavioural intentions. Similarly, Bhattacharjee (2001) applied ECT in information systems research, demonstrating that users' continued usage intentions depend largely on satisfaction arising from expectation confirmation.

Several alternative theoretical lenses could plausibly have been applied to this study. SERVQUAL (Parasuraman et al., 1988) conceptualises quality as a gap between expected and perceived service performance across five dimensions, and is widely used where the primary interest lies in diagnosing specific service quality gaps. The Technology Acceptance Model (Davis, 1989) and its successor, the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), instead centre on the antecedents of technology adoption and continued use, such as perceived usefulness and effort expectancy, and are typically favoured when the research question concerns why a technology is or is not adopted in the first place. ECT was selected over these alternatives because the present study's central concern is not whether customers adopt mobile money, since adoption in Kitwe is already high, nor a dimension-by-dimension audit of service quality gaps, but rather how customers evaluate their ongoing experience against prior expectations across several distinct attributes (service quality, service charges, perceived value, and security) simultaneously. ECT's expectation-disconfirmation mechanism is therefore the more direct theoretical fit for explaining post-usage satisfaction outcomes in an already-adopted service context.

Within financial and mobile service contexts, ECT has been used to explain how customers evaluate service quality, security, charges, and value after using digital services. However, limited studies have applied the theory to mobile money services in Zambia. Therefore, this study adopts expectation-confirmation theory to explain how customers compare their expectations regarding service quality, service charges, perceived value, and security with their actual mobile money experiences, which subsequently determine customer satisfaction.

2.5 Conceptual Framework and Hypothesis Development

2.5.1. Conceptual Framework

In light of the foregoing theoretical foundations and the gaps identified in the existing literature, this study develops a conceptual model illustrating the relationships among service quality, service charges, perceived value, security, and customer satisfaction. Figure 1 presents the proposed conceptual framework, which assumes that these determinants significantly influence customer satisfaction in mobile money services. The relationships depicted in the model provide the basis for the development of the study hypotheses presented in Section 2.5.2.

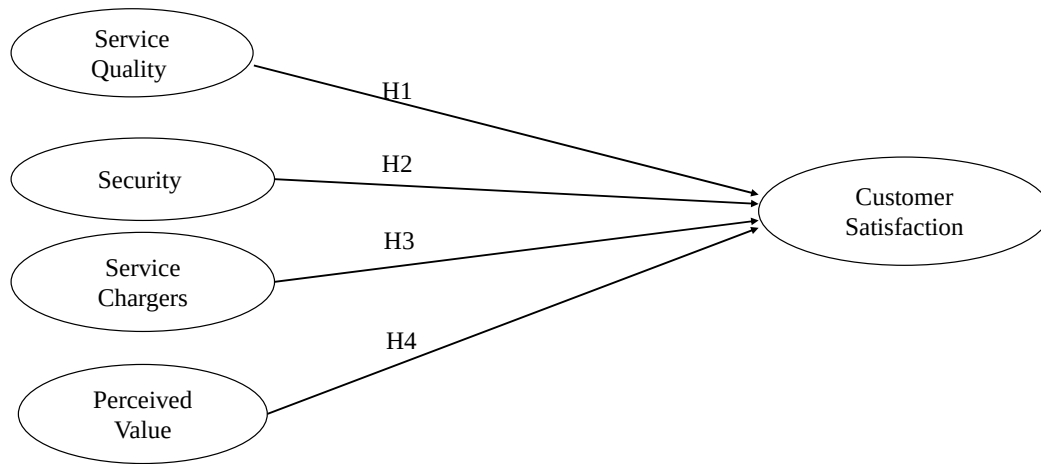


Figure 1. Conceptual framework
2.5.2. Hypothesis Development
Service Quality and Customer Satisfaction

The relationship between service quality and customer satisfaction has received considerable attention in the mobile money and digital financial services literature. Several empirical studies have demonstrated that service quality is a key determinant of customer satisfaction due to its influence on users' perceptions of reliability, responsiveness, and overall service experience. For instance, Rian et al. (2021) and Grea et al. (2026) in their studies on mobile money users in Indonesia found that customers' satisfaction was strongly influenced by the quality of services provided, particularly in relation to ease of transactions, affordability, and convenience. Their findings revealed that a significant proportion of users reported satisfaction when services were delivered efficiently and without delays.

Similarly, Oduro et al. (2018) confirmed that improved service delivery, especially in terms of transaction speed and accessibility, enhances customer satisfaction in mobile money systems. In addition, Lim et al. (2023) established that service quality has a statistically significant positive relationship with customer satisfaction in mobile banking services in Malaysia, emphasising that consistent and reliable service delivery leads to improved customer experiences. Based on the reviewed empirical evidence, it is evident that service quality plays a crucial role in shaping customer satisfaction in mobile money services. Therefore, the first hypothesis is as follows:

H₁: Service quality has a positive and significant influence on customer satisfaction.

Security and Customer Satisfaction

Security is a critical determinant of customer satisfaction in mobile money services because it influences users' trust, confidence, and willingness to continue using digital financial platforms (Wulan & Dahlan, 2023). Hossain et al. (2024) argue that mobile money providers enhance customer satisfaction by ensuring secure

transaction processes and safeguarding sensitive customer information through reliable systems. Similarly, Matovu et al. (2024) identify security as a major concern in the mobile money industry, particularly regarding trust, privacy, and unauthorised access to financial data. Although mobile money services are widely perceived as convenient and efficient, users often remain concerned about perceived risk, especially in cases of fraud, hacking, or unauthorised transactions. Mwiya et al. (2026) note that higher perceived risk negatively affects usage intentions, while strong security mechanisms increase trust and satisfaction. Therefore, when customers feel that their transactions are secure and well-protected, their overall satisfaction with mobile money services improves significantly. Hence, the second hypothesis is that:

H₂: Security has a positive and significant influence on customer satisfaction.

Service Charges and Customer Satisfaction

Service charges play a significant role in determining customer satisfaction within mobile money services because customers often evaluate whether transaction costs are fair, affordable, and justified by the value received. Sharma et al. (2024), in a study on mobile money services, found that service charges have a positive and significant effect on customer satisfaction, as users are more satisfied when transaction fees are reasonable and transparent. This suggests that pricing directly influences customers' perceptions of service value and their willingness to continue using mobile money platforms. Similarly, Inayah et al. (2025) argue that organisations increasingly rely on both service quality and pricing strategies to attract and retain customers in competitive markets. further emphasize that perceived price fairness is a strong predictor of customer satisfaction and loyalty, as customers tend to compare charges with expected benefits. When charges are perceived as fair and affordable, satisfaction levels increase significantly. Therefore, the third set of hypotheses is as follows:

H₃: Service charges have a positive and significant influence on customer satisfaction.

Perceived Value and Customer Satisfaction

Perceived value is an important determinant of customer satisfaction in mobile money services because it reflects the customer's overall evaluation of the benefits received relative to the costs incurred. Mbango (2019) argue that customer satisfaction is strongly influenced by perceived value, as customers form positive or negative judgments based on whether the service meets their expectations in terms of usefulness, convenience, and affordability. In some cases, satisfied customers may not only continue using the service but also recommend it to others, thereby increasing adoption rates. Nursalim et al. (2025) further emphasise that perceived value originates from both the service process and the quality of service delivery in the mobile money industry. Similarly, Hong et al. (2023) found a positive and significant relationship between perceived value and customer satisfaction, indicating that higher perceived value leads to greater satisfaction levels. Therefore, the fourth hypothesis is proposed:

H₄: Perceived value has a positive and significant influence on customer satisfaction.

3.0 RESEARCH METHODOLOGY

3.1 Population, unit of analysis, and sample

A population is a group of people from whom a statistical sample is taken (Willie, 2024). Prior research on determinants of customer satisfaction in mobile money services used a sample size of 413 respondents in Ghana (Edward & Dennis, 2014). A sample size of at least 200 respondents, on the other hand, is appropriate for research since it accounts for any violations of normalcy criteria, factor analysis and reliability analysis (Hair et al., 2019). In addition, its estimated sample size was calculated using Cochran's (1977) formula for an unknown population, $n = Z^2pq/e^2$, with a 95% confidence level ($Z = 1.96$), an estimated proportion of $p = 0.5$ (maximising variance in the absence of prior population estimates), and a margin of error of $e = 0.05$. This yielded a minimum required sample size of 384 mobile money users. However, a sample size of 392 respondents was used in this survey, which is sufficient for research. Respondents were chosen using a systematic sampling method, a probability sampling technique in which every k-th mobile money user was selected from a running list of customers at mobile money agent outlets after a random starting point, ensuring external validity .

Sampling is a strategy for selecting a few individuals (referred to as a sample) from a larger group (referred to as the population), with the few members serving as the foundation for estimating and predicting facts or outcomes for the broader group. Questionnaires were distributed to the target group over a four-week period. The characteristics of the sample are listed in Table1. Choosing a subset from a big population, selecting a sampling method, and computing the sample size are all part of the sampling operation. The significance of this technique is that it aids the researcher in identifying the respondents who will be used to anticipate the study's findings. Trained research assistants approached mobile money users at agent outlets and service points across Kitwe, inviting every k-th customer to complete the survey either on paper or via a linked online questionnaire; a total of 450 questionnaires were administered, of which 392 were returned complete and usable, a response rate of 87.1 %.

Table 1. Respondents' Profile

Variable	Description	Frequency	Percent	Valid percent	Cumulative percent
Gender	Female	205	52.3	52.3	52.3
	Male	187	47.7	47.7	100.0
Age-group	16-20 years	34	8.70	8.70	8.70
	21-25 years	152	38.8	38.8	47.4
	26-30 years	108	27.6	27.6	75.0
	31-35 years	57	14.5	14.5	89.5
	36 years & above	41	10.5	10.5	100.0
Marital status	Single	273	69.6	69.6	69.6
	Married	119	30.4	30.4	100.0
Level of education	Certificate & below	88	22.5	22.5	22.5
	Diploma	58	14.8	14.8	37.3
	Bachelors degree	176	44.9	44.9	82.2
	Master degree	47	12.0	12.0	94.2
	Other	23	5.90	5.90	100.0

		Qualification			
Occupation	Employed	140	35.7	35.7	35.7
	Self-employed	9	2.30	2.30	38.0
	Unemployed	56	14.3	14.3	52.3
	Student	139	35.5	35.5	87.5
	Retired	48	12.2	12.2	100.0
Mobile money usage	Daily	155	39.5	39.5	39.5
	Weekly	108	27.6	27.6	67.1
	Monthly	62	15.8	15.8	82.9
	Rarely	67	17.1	17.1	100.0
Duration of mobile money network	Less than 3 years	58	14.8	14.8	14.8
	4-6 years	188	48.0	48.0	62.8
	7-9 years	125	31.9	31.9	94.6
	10 years & above	21	5.40	5.40	100

Alt Text: Sample Profile reflecting characteristics such as gender, age group, marital status, level of education, occupation, mobile money usage, and duration of mobile money network for 392 respondents.

3.2 Data analysis method

Partial least squares structural equation modelling (PLS-SEM) was employed to analyse the data and test the proposed hypotheses using SmartPLS integrated within Jamovi. PLS-SEM is particularly suitable for simultaneously assessing measurement models and structural relationships among latent constructs (Hair et al., 2019). The technique is widely recommended for complex research models, relatively small sample sizes, and situations where data may not satisfy the strict normality assumptions required by covariance-based SEM (CB-SEM) (Henseler, 2018). Furthermore, PLS-SEM has gained increasing acceptance in management and social science research because of its flexibility in handling latent variables and non-normal datasets (Ahmed et al., 2025). Compared to CB-SEM, PLS-SEM demonstrates strong predictive capabilities and provides robust estimates of composite reliability and convergent validity (Dash & Paul, 2021). It also facilitates causal-predictive analysis, making it appropriate for studies aimed at theory development and prediction rather than theory confirmation (Hair & Alamer, 2022). In the Zambian context, studies by Mwiya et al. (2026) have successfully applied PLS-SEM.

4.0 RESULTS

Preliminary Statistical Checks for Data Distribution

Before testing the structural model, preliminary statistical analyses were conducted to assess the suitability of the data for factor analysis and to evaluate potential common method variance (CMV). The measurement model specifies the relationships between latent constructs and their observed indicators. In this study, four latent constructs comprising 19 reflective indicators were assessed for reliability and validity using factor loadings, indicator reliability, convergent validity, and internal consistency measures.

To minimise the potential effects of common method variance, several procedural remedies were implemented during questionnaire design and administration. These included the use of clear and concise measurement items, assurance of respondent anonymity and confidentiality, and careful organisation of the questionnaire to reduce response bias. Furthermore, Harman's single-factor test was employed to statistically assess common method variance (Podsakoff et al., 2024). The findings revealed that the first unrotated factor accounted for 43.5% of the total variance, which is substantially below the recommended threshold of 50% (Podsakoff et al., 2024). This result indicates that common method bias was unlikely to pose a significant threat to the validity of the study findings.

The suitability of the data for factor analysis was further examined using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The results showed a KMO value of 0.905, indicating excellent sampling adequacy, while Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 4940$, $df = 171$, $p < 0.001$). These findings suggest that the correlation matrix was appropriate for factor analysis, as recommended by Hair et al. (2019), thereby confirming the adequacy of the dataset for subsequent multivariate analysis.

Table 2: Harman single-factor test, Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %
1	8.267	43.51	43.5
2	1.839	9.68	53.2
3	1.726	9.084	62.3
4	1.519	7.993	70.3
5	1.043	5.489	75.8
6	0.603	3.175	78.9
7	0.502	2.64	81.6
8	0.476	2.503	84.1
9	0.432	2.274	86.3
10	0.39	2.051	88.4
11	0.335	1.765	90.2
12	0.314	1.653	91.8
13	0.289	1.521	93.3
14	0.243	1.278	94.6
15	0.24	1.261	95.9
16	0.227	1.193	97.1
17	0.197	1.036	98.1
18	0.189	0.992	99.1
19	0.172	0.905	100

Alt Text: Table of Harman’s single-factor test showing total variance explained. Results indicate that a single factor does not account for the majority of variance, supporting the absence of common method bias.

In Table 3, the measurement model demonstrates strong reliability and validity, with most outer loadings exceeding the recommended threshold (Floyd & Widaman, 1995). Factor loadings below 0.50 do not contribute meaningfully to the model and are therefore removed, according to guidelines by Hair and Alamer (2022). Overall, the dominance of high loading values affirms the construct validity and provides sufficient justification to proceed with hypothesis testing.

Table 3: Factor Loadings

Construct	Items	Loadings
Service Quality	SQ1	0.795
	SQ2	0.873
	SQ3	0.828
Service Charges	SC1	0.668
	SC2	0.898
	SC3	0.634
Perceived Value	PV1	0.654
	PV2	0.842
	PV3	0.832
	PV4	0.797
	PV5	0.794
	PV6	0.852
Security	S1	0.748
	S2	0.827
	S3	0.676
Customer Satisfaction	CS1	0.833
	CS2	0.903
	CS3	0.822
	CS4	0.785

Alt Text: Table presenting analyses of outer loadings for measurement items. All loadings exceed recommended thresholds, confirming indicator reliability and supporting construct validity.

Construct validity test results

The results presented in Table 4 indicate strong internal consistency reliability across all constructs. Cronbach's alpha values exceeded the recommended threshold of 0.60 for social science research, demonstrating acceptable reliability according to George and Mallery (2018). Furthermore, composite reliability (CR) values ranged from 0.799 to 0.919, confirming satisfactory internal consistency among the measurement items. Convergent validity was assessed using the Average Variance Extracted (AVE), with constructs meeting the recommended threshold of above 0.5.

Table 4: Reliability and Convergent Validity

Variable	Cronbach's alpha	Composite Reliability	Average Variance Extracted (AVE)
Service Quality	0.883	0.883	0.715
Security	0.798	0.799	0.570
Service Charges	0.809	0.818	0.605
Perceived Value	0.919	0.919	0.655
Customer Satisfaction	0.910	0.911	0.719

Alt Text: Table reporting convergent validity and reliability results. Factor loadings are high, average variance extracted exceeds the threshold, and composite reliability values confirm internal consistency.

Furthermore, items and constructs exhibiting a Variance Inflation Factor (VIF) score higher than 5 would indicate potential multicollinearity concerns (Magno et al., 2024). However, as detailed in Table 5, the VIF scores for all constructs remained lower than the threshold of concern. Specifically, the VIF scores were between 1.16 and 1.77, which were comfortably within the acceptable range, suggesting that multi-collinearity was not an issue (Hair et al., 2019; Magno et al., 2024).

Table 5: Multi-Collinearity Test (VIF)

Construct	VIF
Service Quality	1.51
Perceived Value	1.76
Security	1.16
Service Charges	1.77

Alt Text: Table displaying results of the multicollinearity test using VIF values. All variance inflation factors fall below accepted thresholds, indicating no multicollinearity concerns among the constructs.

Analyses of Correlation Among All Variables

Table 6 presents the descriptive statistics and correlation coefficients among the study constructs. The findings indicate that mobile money services exhibit positive associations with customer satisfaction. Specifically, security ($r = 0.298$, $p < 0.001$), service charges ($r = 0.426$, $p < 0.001$), service quality ($r = 0.455$, $p < 0.001$), and

perceived value ($r = 0.549$, $p < 0.001$) demonstrate statistically significant positive relationships with customer satisfaction. According to Cohen (2013) guidelines for interpreting effect sizes, correlation coefficients ranging from 0.10 to 0.29 indicate small effects, 0.30 to 0.49 indicate medium effects, and 0.50 and above indicate large effects. Based on these criteria, security ($r = 0.298$, $p < 0.001$) has a small effect size, service charges ($r = 0.426$, $p < 0.001$) and service quality ($r = 0.455$, $p < 0.001$) have medium effect sizes, while perceived value ($r = 0.549$, $p < 0.001$) exhibits a large effect size.

Table 6: Correlations among all variables

#	Construct	Mean	SD	N	CS	S	SC	SQ	PV
1	Customer Satisfaction	3.76	1.01	392	—				
2	Security	3.66	1.02	392	0.298** *	—			
3	Service Charges	3.66	1.01	392	0.426** *	0.336** *	—		
4	Service Quality	3.34	1.21	392	0.455** *	0.246** *	0.519** *	—	
5	Perceived Value	3.70	0.985	392	0.549** *	0.328** *	0.600** *	0.520** *	—

Note. * $p < .05$, **
 $p < .01$, *** $p < .001$

Alt Text: Table presenting correlation analysis showing significant positive relationships among constructs.

Interpretation of hypothesis testing outcomes

Having established the reliability, convergent validity, absence of multicollinearity concerns, and correlation analysis, the study proceeded to evaluate the structural model and test the proposed hypotheses. The hypothesis testing results, detailed in Table 7, conform to the standard that a hypothesis is supported when the t-value surpasses 1.65 or below 0.10 (Hair et al., 2019).

Table 7 shows that most of the t-values exceed the recommended threshold of 1.65, indicating statistically significant relationships among the study variables. The results reveal that security has a significant positive influence on customer satisfaction ($\beta = 0.103$, $t = 2.39$, $p = 0.018$). Service charges, however, have an insignificant effect on customer satisfaction ($\beta = 0.061$, $t = 1.14$, $p = 0.257$). In contrast, service quality significantly influences customer satisfaction ($\beta = 0.169$, $t = 4.05$, $p = 0.001$), while perceived value exhibits the strongest positive effect ($\beta = 0.380$, $t = 6.87$, $p = 0.001$). Overall, these findings highlight the importance of service quality, perceived value, and security in enhancing customer satisfaction.

Table 7: Path Coefficients in the Structural Model

Path	Path Coefficient (β)	Standard Error	T-value	P values
Security → Customer Satisfaction	0.103	0.043	2.39	0.018

Service Charges → Customer Satisfaction	0.061	0.053	1.14	0.257
Service Quality → Customer Satisfaction	0.169	0.041	4.05	0.001
Perceived Value → Customer Satisfaction	0.380	0.055	6.87	0.001

Alt Text: Table presenting path coefficients in the structural model. Reported paths are all positive and statistically significant, indicating meaningful relationships among the latent constructs except for service charges, which are insignificant.

The statistical analysis presented in Table 8 provides insights into the model's explanatory power regarding passenger satisfaction. The R^2 value is 0.414, indicating that 41.4% of the variance in the dependent variable is explained by the model, reflecting moderate explanatory power. According to Cohen (2013), R^2 values of 0.25, 0.50, and 0.75 represent weak, moderate, and substantial effect sizes, respectively. Lastly, in terms of model fit assessment, the study utilised the SRMR criterion. An SRMR value below 0.05 is considered excellent, while a value between 0.05 and 0.08 indicates an adequate fit (Grosemans et al., 2020; Kyndt & Onghena, 2014). In this study, the SRMR value of 0.043 suggests an excellent model fit.

Table 8: R Squared & Model Fit

Variable	R^2	Model fit (SRMR)
Customer Satisfaction	0.414	0.043

Alt Text:Table presenting the model's explanatory power.

5.0 DISCUSSION AND IMPLICATIONS

The primary objective of this study was to examine the determinants of customer satisfaction in the mobile money services sub-sector in Kitwe, Zambia. Specifically, the study investigated the influence of service quality, service charges, perceived value, and security on customer satisfaction. The findings reveal that service quality, perceived value, and security have significant positive effects on customer satisfaction, whereas service charges have no statistically significant influence. These results suggest that customers primarily evaluate mobile money services based on service performance, value received, and transaction security rather than transaction costs.

The findings indicate that service quality significantly enhances customer satisfaction. This suggests that reliable, responsive, and efficient mobile money services improve customers' overall experiences. These findings are consistent with Indajang et al. (2023) and Mwiya et al., (2022), who reported that superior service quality positively influences customer satisfaction in digital financial services. The results also support the expectation-confirmation theory, which posits that customers become satisfied when service performance meets or exceeds their expectations. The study further reveals that perceived value has the strongest positive influence on customer satisfaction. This implies that customers are more satisfied when they perceive that the benefits derived from mobile money services outweigh the monetary and non-monetary costs incurred. These findings are consistent with (Yin & Lin, 2022) and (Abdinoor & Mbamba, 2017), who found that

higher perceived value significantly enhances customer satisfaction and encourages continued usage of mobile financial services.

Similarly, security was found to significantly influence customer satisfaction, indicating that customers place high importance on secure transactions, privacy, and protection against fraud. These findings agree with (Chen et al., 2021), who concluded that improved security strengthens customer trust and satisfaction with digital financial services.

Contrary to expectations, service charges were found to have no significant influence on customer satisfaction. This finding differs from that of Sharma et al. (2024) who found that fair pricing positively affects customer satisfaction. A possible explanation is that transaction charges are relatively similar across mobile money providers in Zambia, leading customers to place greater emphasis on service quality, perceived value, and security. Overall, the findings demonstrate that enhancing service quality, delivering greater customer value, and strengthening transaction security are more effective strategies for improving customer satisfaction and sustaining competitiveness in Zambia's mobile money industry.

This non-finding is theoretically informative rather than merely a null result. Expectation-confirmation theory predicts satisfaction as a function of the gap between expected and perceived performance on a given attribute; where an attribute shows little variation across the alternatives available to a customer, as is the case with mobile money transaction charges in Zambia given the broadly similar fee structures of Airtel Money, MTN MoMo, and Zamtel Money, customers have limited basis for forming differentiated expectations about it, and it is correspondingly less able to drive confirmation or disconfirmation judgements. In this sense, the study extends ECT by suggesting that the theory's explanatory power for a given attribute is conditional on that attribute varying meaningfully within the customer's choice set, a boundary condition not typically made explicit in prior applications of the theory to mobile financial services. This also suggests a fruitful direction for future work: testing whether trust functions as a mediator or moderator between these determinants and satisfaction may reveal that service charges matter more for customers with lower baseline trust in their provider, even where average charges do not differ substantially across the market.

The findings extend the expectation-confirmation theory in the context of mobile money services in Zambia by showing that customer satisfaction is mainly shaped by service quality, perceived value, and security, as users compare actual performance with prior expectations. The study also contributes to the limited empirical evidence on digital financial services in Zambia. Practically, mobile money providers such as Airtel Money, MTN MoMo, and Zamtel Money should improve service reliability, transaction speed, system availability, and customer support, while strengthening cybersecurity to reduce fraud and unauthorized access. Providers should also enhance perceived value through innovative, convenient, and user-friendly services that meet evolving customer needs. Although service charges were found to be insignificant, maintaining transparent and competitive pricing remains important for customer trust. Policymakers and regulators should reinforce consumer protection frameworks and promote digital financial literacy to improve trust and sustain adoption of mobile money services across Zambia.

6.0 LIMITATIONS AND FUTURE RESEARCH

This study has several limitations. First, it was conducted in Kitwe, Zambia, which may limit the generalisability of the findings to other regions or countries with different socio-economic, technological, and regulatory environments. Second, the use of a cross-sectional research design restricts the ability to establish causal relationships among the variables, as the data capture customer perceptions at a single point in time. Although PLS-SEM was applied for analysis, the findings remain largely predictive rather than confirmatory in establishing causality. Third, the study focused only on selected determinants, service quality, service charges, perceived value, and security, thereby excluding other potentially important factors such as customer trust, network coverage, technology readiness and service recovery.

Future research should adopt longitudinal research designs to capture changes in customer perceptions over time and strengthen causal inference. In addition, qualitative approaches such as interviews or focus groups could provide deeper insights into user experiences with mobile money services. Future studies should also expand the geographical scope to include multiple regions of Zambia or comparative studies across countries. Furthermore, incorporating additional variables such as customer loyalty, perceived risk, and digital literacy would provide a more comprehensive understanding of mobile money adoption and satisfaction.

More specifically, future studies should test trust as a mediator or moderator of the relationships examined here, given that trust plausibly conditions how strongly service charges, security, and perceived value translate into satisfaction. Moderating variables such as digital literacy, age, and frequency of mobile money usage also warrant explicit testing, as customers with different levels of digital fluency or transaction frequency may weigh these determinants differently. Finally, cross-country comparative studies, particularly benchmarking Zambia against more extensively studied markets such as Kenya, Ghana, and Tanzania, and studies that explicitly incorporate cross-network interoperability as a determinant, would help establish whether the patterns identified here are specific to Zambia or generalisable across Sub-Saharan African mobile money markets.

7.0 CONCLUSION

This study examined the determinants of customer satisfaction in the mobile money services sub-sector in Kitwe, Zambia, focusing on service quality, service charges, perceived value, and security. The findings show that service quality, perceived value, and security significantly and positively influence customer satisfaction, while service charges have no significant effect. This indicates that customers prioritise reliable service delivery, strong security measures, and overall value rather than transaction costs when evaluating mobile money services. The study is grounded in expectation-confirmation theory, which is supported by the results, as customer satisfaction is largely shaped by the comparison between expected and actual service performance. Overall, the study highlights that improving service efficiency, strengthening cybersecurity, and enhancing perceived value are critical for sustaining customer satisfaction and continued usage of mobile money services in Zambia. These insights are valuable for both service providers and policymakers in strengthening the digital financial ecosystem.

Appendix 1: Questionnaire Items and Sources

Variables	Descriptions	Sources
-----------	--------------	---------

Service Quality	SQ_1 maintain my mobile money network because of low rate of transaction failure	(Jere & Mukupa , 2018)
	SQ_2 Access to my mobile money account is always available on my network every time I use it	
	SQ_3 I am content with the level of service quality offered by my mobile money service provider	
Security	S_1 I am worried that my Mobile money account maybe hacked	(Mwiya et al., 2022)
	S_2 Mobile money servers may process payments incorrectly	
	S_3 The mobile money service providers give no compensation when errors occur	
Service Charges	SC_1 The service charge I pay is equivalent with the quality of service I receive	(Jere & Mukupa , 2018)
	SC_2 I stick to my mobile money network when I feel the service charge is relatively fair	
	SC_3 If I am not happy because my mobile money provider charges higher price, I will switch to a competitor	
Perceived Value	PV_1 My mobile money service provider services are well designed	(Alrwash deh et al., 2020)
	PV_2 My mobile money service provider has an acceptable standard of quality	
	PV_3 My mobile money service provider offers consistent quality	
	PV_4 The services provided by this telecom company are reasonably priced	
	PV_5 My mobile money service provider is economical	
	PV_6 My Mobile Money service provider company offers good prices for their services	
Customer Satisfaction	CS_1 I am committed to my mobile money service provider because of the satisfaction I get it	(Jere & Mukupa , 2018)
	CS_2 I will recommend my mobile money network provider to friends and family	
	CS_3 Overall, I am satisfied with my mobile money service provider	
	CS_4 The services rendered to my mobile money service provider are close to what I expect	

REFERENCES

- Abdinoor, A., & Mbamba, U. (2017). Factors influencing consumers' adoption of mobile financial services in Tanzania. *Cogent Business & Management*, 4(1), 1-24. <https://doi.org/10.1080/23311975.2017.1392273>
- Adams, E. C. A., & Gopakumar, S. (2023). *Examining Factors Affecting Mobile Money Usage and Its Impact on Livelihood in Ghana* (pp. 1-24). <https://doi.org/10.21203/rs.3.rs-3324732/v1>
- Ahmed, T., Klobas, J., Chandran, Akhtar, M. W., & Sergi, B. (2025). How perceived contextual barriers for entrepreneurship reduce entrepreneurial intentions: a TPB study. *International Entrepreneurship and Management Journal*, 21(1), 1-23. <https://doi.org/10.1007/s11365-024-01047-4>
- Alrwashdeh, M., Jahmani, A., Ibrahim, B., & Aljuhmani, H. Y. (2020). Data to model the effects of perceived telecommunication service quality and value on the degree of user satisfaction and e-WOM among telecommunications users in North Cyprus. *Data in Brief*, 28, 1-10. <https://doi.org/10.1016/j.dib.2019.104981>
- Alzoubi, H., Alshurideh, M., Kurdi, B., & Inairat, M. (2020). Do perceived service value, quality, price fairness and service recovery shape customer satisfaction and delight? A practical study in the service telecommunication context. *Uncertain Supply Chain Management*, 579-588. <https://doi.org/10.5267/j.uscm.2020.2.005>
- Anderson, E. W., & Sullivan, M. W. (1993). The Antecedents and Consequences of Customer Satisfaction for Firms. *Marketing Science*, 12(2), 125-143. <https://doi.org/10.1287/mksc.12.2.125>
- Angelova, B., & Zekiri, J. (2011). Measuring Customer Satisfaction with Service Quality Using American Customer Satisfaction Model (ACSI Model). *International Journal of Academic Research in Business and Social Sciences*, 1(3), 27-45. <https://doi.org/10.6007/ijarbss.v1i2.35>

- Apeti, A. E. (2023). Household welfare in the digital age: Assessing the effect of mobile money on household consumption volatility in developing countries. *World Development*, 161, 1-23. <https://doi.org/10.1016/j.worlddev.2022.106110>
- Armawan, I., Sudarmiadin, S., Hermawan, A., & Rahayu, W. P. (2023). The effect of social media marketing, SerQual, eWOM on purchase intention mediated by brand image and brand trust: Evidence from black sweet coffee shop. *International Journal of Data and Network Science*, 7(1), 141-152. <https://doi.org/10.5267/j.ijdns.2022.11.008>
- Aron, J. (2018). Mobile Money and the Economy: A Review of the Evidence. *The World Bank Research Observer*, 33(2), 135-188. <https://doi.org/10.1093/wbro/lky001>
- Bajwa, I. A., Ahmad, S., Mahmud, M., & Bajwa, F. A. (2023). The impact of cyberattacks awareness on customers' trust and commitment: an empirical evidence from the Pakistani banking sector. *Information & Computer Security*, 31(5), 635-654. <https://doi.org/10.1108/ICS-11-2022-0179>
- Bank of Zambia. (2017). *National Financial Inclusion Strategy*. <https://www.boz.zm/sites/default/files/2026-02/National-Financial-Inclusion-Strategy-2017-2022.pdf>
- Bhattacharjee, A. (2001). Understanding Information Systems Continuance: An Expectation-Confirmation Model. *MIS Quarterly*, 25(3), 351-370. <https://doi.org/10.2307/3250921>
- Blut, M., Chaney, D., Lunardo, R., Mencarelli, R., & Grewal, D. (2024). Customer Perceived Value: A Comprehensive Meta-analysis. *Journal of Service Research*, 27(4), 501-524. <https://doi.org/10.1177/10946705231222295>
- Chen, H., Tse, D., Si, P., Gao, G., & Yin, C. (2021). Strengthen the Security Management of Customer Information in the Virtual Banks of Hong Kong through Business Continuity Management to Maintain Its Business

Sustainability. *Sustainability*, 13(19), 1-33.
<https://doi.org/10.3390/su131910918>

Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. Routledge.
<https://doi.org/10.4324/9780203771587>

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
<https://doi.org/10.2307/249008>

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, 173, 121092. <https://doi.org/10.1016/j.techfore.2021.121092>

Deyalage, P., & Kulathunga, D. (2019). Factors Affecting Online Customer Satisfaction: The Sri Lankan Perspective. *International Journal of Business and Management*, 14(2), 99-120. <https://doi.org/10.5539/ijbm.v14n2p99>

Edward, M. M., & Dennis, O. A. (2014). The Determinant of Customer Satisfaction on Mobile Money Transfer Users. *Academia.EduDO Amofahacademia.Edu*, 3(7).
https://www.academia.edu/download/49929906/Volume_3_Issue_7_paper_2.pdf

Eijdenberg, E., Isaga, N., Paas, L., Choongo, P., Masurel, E., & Eyana, S. M. (2026). *African Businesses and Multiple Value Creation*. World Scientific.
<https://doi.org/10.1142/14695>

Finscope. (2025). *Zambia Finscope Survey Topline Findings*. www.boz.zm

Floyd, F. J., & Widaman, K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment*, 7(3), 286-299. <https://doi.org/10.1037/1040-3590.7.3.286>

Fornell, C. (1992). A National Customer Satisfaction Barometer: The Swedish Experience. *Journal of Marketing*, 56(1), 6-21.
<https://doi.org/10.1177/002224299205600103>

- George, D., & Mallery, P. (2018). *IBM SPSS Statistics 25 Step by Step*. Routledge.
<https://doi.org/10.4324/9781351033909>
- Grea, E. Al, Situmorang, S. H., & Sembiring, B. K. F. (2026). Systematic Literature Review: Determinants of Mobile Banking Users' Satisfaction in Indonesia. *Annals of Management and Organization Research*, 7(3), 451-467.
<https://doi.org/10.35912/amor.v7i3.2574>
- Grosemans, I., Smet, K., Houben, E., Cuyper, N. De, & Kyndt, E. (2020). Development and Validation of an Instrument to Measure Work-Related Learning. *Scandinavian Journal of Work and Organizational Psychology*, 5(1).
<https://doi.org/10.16993/sjwop.99>
- GSMA. (2024). *The Mobile Economy Sub-Saharan Africa*.
- GSMA. (2026). *Global System for Mobile Communications Association (GSMA)*.
<https://www.gsma.com/>
- Gyamerah, K. K., & Tetteh, F. K. (2024). Examining the impact of mobile money on financial inclusion in Sub-Saharan Africa: the role of institutions and governance. *SAM Advanced Management Journal*, 89(4), 315-339.
<https://doi.org/10.1108/SAMAMJ-08-2024-0048>
- Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics*, 1(3), 100027.
<https://doi.org/10.1016/j.rmal.2022.100027>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
<https://doi.org/10.1108/EBR-11-2018-0203>
- Henseler, J. (2018). Partial least squares path modeling: Quo vadis? *Quality & Quantity*, 52(1), 1-8. <https://doi.org/10.1007/s11135-018-0689-6>
- Hong, C., Choi, E.-K., Joung, H.-W., & Kim, H.-S. (2023). The impact of customer perceived value on customer satisfaction and loyalty toward the food delivery

- robot service. *Journal of Hospitality and Tourism Technology*, 14(5), 908-924.
<https://doi.org/10.1108/JHTT-11-2022-0305>
- Hossain, M., Hossain, A., & Manik, M. H. (2024). Assessment of Customers' Satisfaction in Mobile Banking Services: The Mediating Role of Ease of Use. *Transnational Business and Management*, 2(2), 43-64.
<https://doi.org/10.33182/tbm.v2i2.3432>
- Inayah, M., Hidayat, A. M., Widodo, A., & Rubiyanti, N. (2025). The Effect of Price and Service Quality on Customer Loyalty: The Mediating Role of Traveloka Customer Satisfaction. *Formosa Journal of Multidisciplinary Research*, 4(5), 2309-2316. <https://doi.org/10.55927/fjmr.v4i5.212>
- Indajang, K., Candra, V., Sianipar, M. Y., Sembiring, L. D., & Simatupang, S. (2023). The Effect of Service Quality and Price on Customer Satisfaction. *Ekonomi, Keuangan, Investasi Dan Syariah (EKUITAS)*, 4(3), 942-950.
<https://doi.org/10.47065/ekuitas.v4i3.3090>
- Jack, W., & Suri, T. (2014). Risk Sharing and Transactions Costs: Evidence from Kenya's Mobile Money Revolution. *American Economic Review*, 104(1), 183-223. <https://doi.org/10.1257/aer.104.1.183>
- Jere, M., & Mukupa, A. (2018). Customer satisfaction and loyalty drivers in the Zambian mobile telecommunications industry. *Journal of Business & Retail Management Research*, 13(02), 120-128.
<https://doi.org/10.24052/JBRMR/V13IS02/ART-11>
- Juliana, J., Pramono, R., Sartjie, I., Roon, J., Orlina, M., & Daicy, V. (2022). Determining Experience Quality on Customers' Perceived Value, Satisfaction and Loyalty. *FokusBisnis Media Pengkajian Manajemen Dan Akuntansi*, 21(2), 132-146. <https://doi.org/10.32639/fokbis.v21i2.52>
- Khan, S. K., Hassan, N. U., & Anjum, M. N. (2022). Factors influencing customer satisfaction in e-banking services in Pakistan: evidence based on reliability, privacy; convenience. *Journal of Social Research Development*, 3(02), 286-296.
<https://doi.org/10.53664/JSRD/03-02-2022-12-286-296>

- Kyndt, E., & Onghena, P. (2014). *The Integration of Work and Learning: Tackling the Complexity with Structural Equation Modelling* (pp. 255-291). https://doi.org/10.1007/978-94-007-7012-6_14
- Lim, K. B., Yeo, S. F., Tey, Y. N., & Tan, C. L. (2023). Customer Satisfaction On E-Banking Service Quality In Malaysia. *International Journal of Entrepreneurship, Business and Creative Economy*, 3(2), 32-45. <https://doi.org/10.31098/ijebce.v3i2.1333>
- Magno, F., Cassia, F., & Ringle, C. M. (2024). Guest editorial: Using partial least squares structural equation modeling (PLS-SEM) in quality management. *The TQM Journal*, 36(5), 1237-1241. <https://doi.org/10.1108/TQM-06-2024-426>
- Matovu, J., Mirembe, D. P., & Eyobu, O. S. (2024). Security issues in mobile money eco-system. *International Journal of Information Technology, Communications and Convergence*, 4(3), 203-236. <https://doi.org/10.1504/IJITCC.2024.145822>
- Mbango, P. (2019). The role of perceived value in promoting customer satisfaction: Antecedents and consequences. *Cogent Social Sciences*, 5(1), 1-16. <https://doi.org/10.1080/23311886.2019.1684229>
- Mugova, S., Kiliswa, N. G., & Mashizha, M. (2025). The mediating role of customer satisfaction in the relationship between service quality and customer loyalty in multi-channel retail banking. *Cogent Business & Management*, 12(1), 1-23. <https://doi.org/10.1080/23311975.2025.2514937>
- Muhammad, S. F., & Suryati. (2026). The Role of Customer Satisfaction in Mediating the Influence of Service Quality, Perceived Enjoyment, and Trust on Customer Loyalty in Telkomsel Data Package Purchases. *Jurnal Manajemen Motivasi*, 22(1), 1251-1263. <https://doi.org/10.29406/jmm.v22i1.8586>

Mwiya, B. (2006). Credit Default in the Zambian Banking Sector: Need for Credit Reference Bureaus. *Journal of Business*, 1(2), 2-15.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2177925

Mittal, V., & Kamakura, W. A. (2001). Satisfaction, Repurchase Intent, and Repurchase Behavior: Investigating the Moderating Effect of Customer Characteristics. *Journal of Marketing Research*, 38(1), 131-142.
<https://doi.org/10.1509/jmkr.38.1.131.18832>

Mvula, F., Tembo, S., & Phiri, J. (2020). A Blockchain Based Mobile Money Interoperability Scheme. *International Journal of Advanced Computer Science and Applications*, 11(1), 132-139.

Mwiya, B., Bwalya, J., Siachinji, B., Sikombe, S., Chanda, H., & Chawala, M. (2017). Higher Education Quality and Student Satisfaction Nexus: Evidence from Zambia. *Creative Education*, 08(07), 1044-1068.
<https://doi.org/10.4236/ce.2017.87076>

Mwiya, B., Chikumbi, F., Shikaputo, C., Kabala, E., Kaulung'ombe, B., & Siachinji, B. (2017). Examining Factors Influencing E-Banking Adoption: Evidence from Bank Customers in Zambia. *American Journal of Industrial and Business Management*, 07(06), 741-759. <https://doi.org/10.4236/ajibm.2017.76053>

Mwiya, B., Hapambali, S., Chawala, M., Manchisi, R., Kasanda, E., Bwalya, J., & Kasonde, T. (2026). Examining the Determinants of Consumer Trust Towards Electronic Commerce Adoption Intentions: Evidence from University Students in Copperbelt, Zambia. In *Kwame Nkrumah University Multidisciplinary Journal* (Vol. 3, Number 1). <https://accessjournal.nkrumah.edu.zm/index.php/knuj>

Mwiya, B., Katai, M., Bwalya, J., Kayekesi, M., Kaonga, S., Kasanda, E., Munyonzwe, C., Kaulungombe, B., Sakala, E., Muyenga, A., & Mwenya, D. (2022). Examining the effects of electronic service quality on online banking customer satisfaction: Evidence from Zambia. *Cogent Business & Management*, 9(1). <https://doi.org/10.1080/23311975.2022.2143017>

- Mwiya, B., Katongo, M., Mulambya, A., Kaniki Siwale, M., Bwalya, J., Chawala, M., Kasanda, E., & Choongo, P. (2024). Effects of risk perceptions and contextual support on entrepreneurial intention: Evidence from the Covid-19 Era. *International Journal of Multidisciplinary Research and Growth Evaluation*, 5(1), 614-625. <https://doi.org/10.54660/.IJMRGE.2024.5.1.614-625>
- Mwiya, B., Puta, S., Chawala, M., Manchisi, R., Kasonde, T., & Sinyangwe, M. (2026). Examining factors Influencing Environmental Sustainable Entrepreneurial Intentions among University Students in Zambia. In *Kwame Nkrumah University Multidisciplinary Journal* (Vol. 3, Number 1). <https://accessjournal.nkrumah.edu.zm/index.php/knuj>
- Mwiya, B., Siachinji, B., Bwalya, J., Sikombe, S., Chawala, M., Chanda, H., Kayekesi, M., Sakala, E., Muyenga, A., & Kaulungombe, B. (2019). Are there study mode differences in perceptions of university education service quality? Evidence from Zambia. *Cogent Business & Management*, 6(1), 1-19. <https://doi.org/10.1080/23311975.2019.1579414>
- Mwiya, B., Wang, Y., Kaulungombe, B., & Kayekesi, M. (2019). Exploring entrepreneurial intention's mediating role in the relationship between self-efficacy and nascent behaviour. *Journal of Small Business and Enterprise Development*, 26(4), 466-485. <https://doi.org/10.1108/JSBED-03-2017-0083>
- Nursalim, C. P., Tannia, T., & Robert, A. (2025). Service Quality and Perceived Value Toward Customer Satisfaction in E-Commerce Delivery: The Role of Trust. *International Journal of Applied Business and International Management*, 10(1), 136-153. <https://doi.org/10.32535/ijabim.v10i1.3741>
- Oduro, E., Boachie-Mensah, F., & Agyapong, G. (2018). Determinants of Customer Satisfaction in the Telecommunication Industry in Ghana: A Study of MTN Ghana Limited. *International Journal of Marketing Studies*, 10(3), 101-130. <https://doi.org/10.5539/ijms.v10n3p101>
- Oktavanny, A. Y., & Sulistiadi, W. (2022). The Determinant Factors of Customer Satisfaction: Promotion, Service Quality and Brand Image. *IJEED (International*

Journal of Entrepreneurship and Business Development), 5(2), 312-322.
<https://doi.org/10.29138/ijebd.v5i2.1760>

Oliver, R. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4), 460-469.
<https://doi.org/10.1177/002224378001700405>

Oliver, R. (2010). Customer Satisfaction. In *Wiley International Encyclopedia of Marketing* (pp. 1-23). Wiley.
<https://doi.org/10.1002/9781444316568.wiem03008>

Oliver, R. (2014). Satisfaction: A behavioral perspective on the consumer: A behavioral perspective on the consumer. In *Satisfaction: A Behavioral Perspective on the Consumer, Second Edition*. Taylor and Francis.
<https://doi.org/10.4324/9781315700892>

Osabutey, E., & Jackson, T. (2024). Mobile money and financial inclusion in Africa: Emerging themes, challenges and policy implications. *Technological Forecasting and Social Change*, 202, 1-22.
<https://doi.org/10.1016/j.techfore.2024.123339>

Pallangyo, H. (2022). Cyber Security Challenges, its Emerging Trends on Latest Information and Communication Technology and Cyber Crime in Mobile Money Transaction Services. *Tanzania Journal of Engineering and Technology*, 41(2), 189-204. <https://doi.org/10.52339/tjet.v41i2.792>

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.

Podsakoff, P. M., Podsakoff, N. P., Williams, L. J., Huang, C., & Yang, J. (2024). Common Method Bias: It's Bad, It's Complex, It's Widespread, and It's Not Easy to Fix. *Annual Review of Organizational Psychology and Organizational Behavior*, 11(1), 17-61. <https://doi.org/10.1146/annurev-orgpsych-110721-040030>

- Putrevu, J., & Mertzanis, C. (2024). The adoption of digital payments in emerging economies: challenges and policy responses. *Digital Policy, Regulation and Governance*, 26(5), 476-500. <https://doi.org/10.1108/DPRG-06-2023-0077>
- Rian, H., Mohamad, R., & Agung, W. H. (2021). Customer satisfaction in mobile payment system: Finding from Indonesia. *JurnalDinamikaManajemen Dan Bisnis*, 3(2), 28-36. <https://doi.org/10.21009/JDMB.03.2.2>
- Sabbaghi, O. (2025). Mobile money, digital financial inclusion, and evidence on saving and borrowing. *Digital Policy, Regulation and Governance*, 27(4), 389-403. <https://doi.org/10.1108/DPRG-04-2024-0060>
- Saputra, G. A. G., Supriyadi, D., & Setiawan, R. (2025). The Influence of Service Quality and Product Quality on Customer Retention with Customer Satisfaction as a Mediating Variable. *Golden Ratio of Mapping Idea and Literature Format*, 6(1), 367-382. <https://doi.org/10.52970/grmilf.v6i1.1626>
- Sharma, V., Jangir, K., Gupta, M., & Rupeika-Apoga, R. (2024). Does service quality matter in FinTech payment services? An integrated SERVQUAL and TAM approach. *International Journal of Information Management Data Insights*, 4(2), 1-24. <https://doi.org/10.1016/j.jjime.2024.100252>
- Sleiman, K. A. A., Juanli, L., Lei, H., Liu, R., Ouyang, Y., & Rong, W. (2021). User Trust levels and Adoption of Mobile Payment Systems in China: An Empirical Analysis. *Sage Open*, 11(4), 1-27. <https://doi.org/10.1177/21582440211056599>
- Tengeh, R. K., & Gahapa, T. F. S. (2020). Mobile Money as a Sustainable Alternative for SMEs in Less Developed Financial Markets. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 163-200. <https://doi.org/10.3390/joitmc6040163>
- Twum, K. K., Kosiba, J. P. B., Hinson, R. E., Gabrah, A. Y. B., & Assabil, E. N. (2023). Determining mobile money service customer satisfaction and continuance usage through service quality. *Journal of Financial Services Marketing*, 28(1), 30-42. <https://doi.org/10.1057/s41264-021-00138-5>

- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478. <https://doi.org/10.2307/30036540>
- Willie, M. M. (2024). Population and Target Population in Research Methodology. *Golden Ratio of Social Science and Education*, 4(1), 75-79. <https://doi.org/10.52970/grsse.v4i1.405>
- Wulan, S. F. C., & Dahlan, K. S. S. (2023). The Effect Of Security And Trust On Mobile Banking Customer Satisfaction Mediated By Convenience Factors. *Journal of Social Science (JoSS)*, 2(10), 888-902. <https://doi.org/10.57185/joss.v2i10.144>
- Yin, L.-X., & Lin, H.-C. (2022). Predictors of customers' continuance intention of mobile banking from the perspective of the interactivity theory. *Economic Research-Ekonomska Istraživanja*, 35(1), 6820-6849. <https://doi.org/10.1080/1331677X.2022.2053782>
- ZICTA. (2023). *Zambia Information and Communications Technology Authority*. <https://www.zicta.zm/ict-statistics/isp-stats>