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Service Quality and Customer Experience in Sync: Unpacking Value Co-Creation in Zimbabwe's Mobile Telecommunications Sector

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This study investigates the interdependent relationship between service quality and customer experience in Zimbabwe's mobile telecommunications sector, focusing on their role in value co-creation. The research adopts a positivist, quantitative approach to empirically examine how service quality and customer experience mutually influence each other. A structured questionnaire was administered to a sample of 306 participants across all ten provinces of Zimbabwe, and the data were analyzed using Structural Equation Modelling (SEM) in Statistical Packages for Social Sciences (SPSS) and Analysis for Moment Structure (AMOS). The findings reveal a significant and reciprocal relationship between service quality and customer experience, supporting the notion that these constructs function as interactive drivers of co-created value. As such this study advances theoretical understanding by validating the service quality and customer experience relationship. It also has practical implications for telecoms providers seeking to enhance their competitiveness through improved customer engagement and experience design. The research contributes to both academic discourse on service systems and the strategic direction of telecommunications firms operating in emerging markets.

Keywords: *Service quality, consumer experience, value co-creation, mobile telecommunications, Zimbabwe.*

Introduction

Zimbabwe's mobile telecommunications industry plays a pivotal role in the country's socio-economic development, as it serves as the primary channel for communication, digital inclusion, and financial services (Manuere *et al.,* 2021). Muchenje (2022) indicates that the Zimbabwe mobile telecommunications sector is dominated by three main mobile network operators namely Econet Wireless, NetOne, and Telecel Zimbabwe. This sector has undergone digital transformation, driven by the increased adoption of mobile internet, mobile money platforms and the demand for value-added services (Susilo & Dizon, 2023). Notwithstanding the growth experienced by the sector, Chitimira and Torerai (2023) assert that it faces persistent challenges such as network outages, data affordability issues, and infrastructure limitations, particularly in remote regions. The Postal and Telecommunications Regulatory Authority of

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Zimbabwe (POTRAZ) also agree that in as much as it seeks to ensure fair competition, innovation, and Service Quality (SQ) improvement, the sector faces SQ and Customer Experience (CX) challenges (POTRAZ, 2016, 2017, 2018, 2019). Gleim *et al.* (2024) and Serôdio et al. (2023) confirm that poor SQ and CX are resulting from lack of innovation by service providers in response to changing customer tastes and preferences.

Understanding the relationship between SQ and CX is key for ensuring customer loyalty (Chigwende & Govender, 2021). In the same vein, Xianguang *et al.* (2025) posit that SQ and CX drive customer engagement, since high SQ reflects network reliability, responsive customer service, and clear billing that builds trust and satisfaction, which are key to retaining users. Meanwhile, Dağaşaner and Karaatmaca (2025) assert that CX enhances emotional connection, making customers more likely to remain loyal, use more services, and advocate for the brand. SQ and CX also influence customer perceptions and behaviours, fostering deeper engagement and long-term customer value (Kamyabi *et al.,* 2025).

In the mobile telecommunications sector, improvements in SQ directly influence CX by reducing frustration and increasing satisfaction during user interactions (du Preez C & van Staden, 2024). Gustafsson et al. (2024) also suggest that positive CX influences perceptions of SQ, as emotionally satisfying and well-designed customer journeys lead to high quality reviews. According to Dam and Dam (2021), understanding this reciprocal relationship between CX and SQ enables providers to develop holistic strategies that address operational efficiency and create meaningful and engaging CX. This ultimately enhances loyalty, customer retention, and competitive advantage. The identification of significant SQ and CE dimensions equips industry with evidence-based strategies to optimise resource allocation, improve customer satisfaction, and strengthen brand loyalty. The current study contributes to theory by examining the direct and reciprocal relationship between SQ and CX, an area that remains underexplored in existing service marketing and customer behaviour literature. The study is grounded in SERVQUAL and CX models, which are integrated into a unified framework that reflects their dynamic relationship. This advances theoretical knowledge about how SQ and CX work together to promote consumer engagement in industries such as the telecoms industry.

Objectives

The primary objective is to establish the relationship between SQ and CX by addressing the following sub-objectives.

1. To measure key dimensions of SQ perceived by mobile telecommunications customers in Zimbabwe.
2. To evaluate the impact of SQ on CX within Zimbabwe's mobile telecommunications sector.
3. To assess the extent to which CX mediates or reinforces the effect of SQ on perceived value co-creation.
4. To identify which dimensions of SQ contribute most significantly to a

positive CX in the Zimbabwean context.
5. To provide empirical evidence on how co-creation of value can be enhanced by optimizing SQ and CX interactions**.**

Methodology

This study was grounded in a positivist research philosophy, emphasising objectivity in examining the relationship between SQ and CX within Zimbabwe's mobile telecommunications sector. A quantitative survey research design was adopted, and a self-administered questionnaire was distributed to 306 participants drawn from all ten provinces of Zimbabwe to ensure a broad geographic representation of mobile telecoms customers. Convenience non-probability sampling was used to select respondents, although this limits the generalisability of the findings to the entire population. The questionnaire consisted of structured items measured on Likert scales, allowing for standardised and quantifiable responses relating to perceptions of SQ and CX. A pilot study conducted with seven participants from Harare assessed the instrument's clarity, relevance, and reliability. Ethical considerations were rigorously observed and informed consent was obtained from all participants, who were assured that participation was voluntary and guaranteed confidentiality and anonymity. Data collected were coded and entered into Statistical Package for Social Sciences (SPSS), where descriptive statistics and tests for validity and reliability, such as Cronbach's Alpha, were performed to assess the data's quality and consistency. Structural Equation Modelling (SEM) was then conducted using Analysis of Moment Structures (AMOS) software to examine the hypothesised relationships between SQ and CX.

Literature Review

SQ and CX have emerged as critical constructs that influence customer perceptions, behaviour, and overall satisfaction. Although global literature has extensively explored SQ and CX as individual drivers of customer satisfaction, attention is now being drawn to their interconnected and interactive nature in the context of value co-creation. This literature review explores foundational theories such as the Service-Dominant Logic, the SERVQUAL model**,** and CX Theory, synthesising empirical studies that examine the bidirectional relationship between SQ and CX. The review therefore lays the theoretical and empirical groundwork for conceptualising SQ and CX as mutually reinforcing mechanisms within a co-creative service environment.

Theoretical Foundations
Service-Dominant Logic Theory

The Service-Dominant Logic (S-D Logic) Theory, advanced by Vargo and Lusch (2004) upholds a service-centered approach. According to Mazurov (2024),

value is co-created by providers and consumers who are active players in this process. In the Zimbabwean mobile telecommunications sector, S-D Logic Theory enhances the understanding of how SQ and CX interact to co-create value (Hartwig et al., 2021). Telecommunications services such as network reliability, customer support, data services, and digital platforms are key to value creation (Toscher, 2021). Ujiati and Marsasi (2024) highlighting value creation aver that CX is a dynamic and essential component of perceived value, rather than a passive outcome. Mele *et al.* (2014), too, opine that SQ and CX are interrelated elements in a co-creation system, where the provider's operational efficiency and the customer's perception and feedback contribute to mutual value.

SERVQUAL Model

The SERVQUAL model, advanced by Parasuraman et al. (1988), views SQ as the gap between customer expectations and perceptions in five key dimensions: tangibles, reliability, responsiveness, assurance, and empathy. In the Zimbabwean mobile telecommunications sector, the model is used to examine network service provider perception. Tien and Huong (2023) reinforce that the SERVQUAL model provides measurable indicators that can be quantitatively assessed to determine the extent of SQ. These indicators facilitate statistical analysis through survey instruments and support the alignment of operational strategies with customer-centred goals (Abdullah *et al.,* 2022). When integrated with concepts relating to CX and S-D Logic, SERVQUAL contributes to a deeper understanding of how value is co-created within service ecosystems. This model therefore constitutes a critical base for analysing the symbiotic relationship between SQ and CX within Zimbabwe's telecommunications industry.

Customer Experience Theory

The CX Theory emphasises the holistic, cumulative, and subjective nature of customer interactions with a company across all touchpoints and overtime (Lemon & Verhoef, 2016). Waqas *et al.* (2021), meanwhile, opine that experiences are co-created by the service provider and the receiver of these services. This theory therefore allows for an understanding of how customers evaluate service encounters based on functional performance and emotional or psychological outcomes (Barbu et al., 2021). Nguyen (2022) upholds the application of the CX theory and examines how perceived SQ contributes to positive or negative experiential outcomes. This framework enables the identification of experiential drivers that influence loyalty, trust, and long-term engagement. Accordingly, CX theory provides a critical conceptual foundation for examining how mobile telecoms providers in Zimbabwe could create more meaningful, engaging, and value-driven experiences for their customers.

Integrating the SERVQUAL Model, CX Theory, and S-D Logic Theory into a Single Conceptual Model

The conceptual model is a combination of the SERVQUAL Model, CX Theory, and S-D Logic Theory. This model provides a foundation for examining the relationship between SQ and CX within the mobile telecommunications sector in Zimbabwe. The SERVQUAL framework provides five empirically validated dimensions – tangibles, reliability, responsiveness, assurance, and empathy – that serve as indicators for measuring perceived SQ. The CX theory, meanwhile, supports the SERVQUAL theory since CX is the result of customers' interactions with service providers over time and across multiple touchpoints. CX captures the emotional, cognitive, and sensory components that influence how customers interpret SQ and overall brand engagement. S-D Logic Theory is the unifier for co-creation through interactions between customers and service providers, and by extension, the interaction between SQ and CX. S-D Logic Theory therefore justifies the conceptual model's assumption of a bidirectional relationship between SQ and CX, where improvements in SQ enhance CE, and enriched CEs, in their turn, shape perceptions of SQ. This cyclical feedback loop supports the idea that value creation is not linear but interactive and mutually reinforcing.

Service Quality

SQ influences customer satisfaction, customer retention, and competitive positioning and is commonly defined as the customer's overall evaluation of the quality-of-service delivery, based on their expectations and perceptions (Gonu *et al.,* 2023). Although many frameworks were developed to measure SQ, the most widely accepted one is the SERVQUAL model developed by Parasuraman *et al.* (1988). The model outlines five key dimensions that have been effectively adapted to the mobile telecommunications context, namely: tangibles, reliability, responsiveness, assurance, and empathy. These dimensions are explained in detail in the following section.

Tangibles

According to Cao *et al.* (2023), tangibles are physical and infrastructural elements through which services are delivered, and they include network infrastructure, customer service centers, mobile applications, and other visible elements. In the telecoms sector, this includes modern communication technology, signal towers, and user-friendly mobile interfaces. Tangibles also include digital interfaces, IT infrastructure, and the aesthetic and functional quality of virtual touchpoints. This shift towards digital technologies reflects a broader redefinition of "presence" and "perception" in service encounters, driven by innovation and changing consumer expectations.

Reliability

The reliability dimensions of SERVQUAL model assesses how consistently a

service provider delivers on its promises and refers to its ability to perform the promised service reliably and effectively (Parasuraman *et al.,* 2002). Reliability reflects the extent to which customers can trust the service to function correctly every time, without errors, delays, or failures. According to du Preez and van Staden (2024) in telecommunications industries, reliability relates to system uptime, accurate billing, timely service delivery, and consistent performance. Customers expect reliable network coverage, uninterrupted data services, and consistent call quality and a lack of reliability undermines trust and satisfaction (Ingy Shafei, 2016). Li and Jia (2021) aver that reliability is measured through objective performance metrics and subjective customer perceptions. Since reliability directly influences customers' confidence in a service provider, it is a foundational component of SQ that impacts customer satisfaction and loyalty.

Responsiveness

Another SERVIQUAL dimension, responsiveness, refers to the willingness and ability of a service provider to assist customers promptly and effectively (Abdullah *et al.,* 2022). In the telecommunications context, responsiveness involves resolving service disruptions, answering calls and responding timeously to emails or messages (Følstad & Taylor, 2021). Ngai *et al.* (2021) opine that in digital environments, responsiveness relates to features such as real-time chatbots**,** automated status updates, or self-service options that smoothen the customer journey. Responsiveness shapes customer perception and when service providers respond promptly and helpfully, customers are more likely to feel valued and be satisfied. Conversely, delays or poor communication could lead to frustration and dissatisfaction, irrespective of the overall quality of the service. The next section discusses assurance, another service quality variable.

Assurance

Assurance is another service quality dimension that is critical in the telecommunications sector. Cui (2025) avers that the assurance dimension relates to the competence, courtesy, and professionalism of staff, particularly in managing customer concerns and providing technical support. Owusu-Kyei *et al.* (2023) also note that assurance inspires a sense of security, confidence and trust in a service provider's competence, courtesy and credibility. Koo *et al*. (2021), too, opine that assurance is reflected through staff competence**,** clear communication**,** confidential handling of customer information**,** and respectful treatment of them. In the telecommunications sector, customers rely on service personnel to provide accurate advice, resolve complex issues, and handle sensitive data securely (Owusu-Kyei *et al.,* 2023). According to Manukonda (2023), the ability of employees to deliver services with confidence and professionalism directly affects how safe and reassured customers feel. Kalia *et al.* (2021) therefore encourages employees to demonstrate knowledge, professionalism, and ethical behaviour in their interaction with customers.

Empathy

Empathy denotes a service provider's capacity to comprehend, attend to, and offer individualised attention to clients (Owusu-Kyei *et al.,* 2023). It also relates to how the organisation recognises and responds to individual customer needs, emotions, and circumstances, treating each customer as a valued person rather than merely a transaction (Kalia *et al.,* 2021). According to Abdullah *et al.* (2022), frontline staff play a crucial role in conveying empathy by showing sensitivity, flexibility and emotional intelligence during interactions. Gonu *et al.* (2023) highlight that empathy is demonstrated by adjusting services for elderly users, being patient with frustrated customers, or offering tailored solutions based on unique customer situations. Rane (|2023) posits that a lack of empathy through robotic responses, indifference, or dismissive behaviour, could result in dissatisfaction and erode customer relationships, even if the technical aspects of service are adequate.

The study conducted by Elrahman and Kamal (2022) in Egypt's mobile telecoms sector confirmed the validity of the SERVQUAL dimensions in measuring user-perceived SQ. Similarly, Abdullah et al. (2022) demonstrated that SQ significantly impacts customer loyalty in the Kurdistan region, where reliability and assurance emerged as key drivers. Chigwende and Govender (2021) also employed SERVQUAL to analyse customer satisfaction, loyalty and switching consumer behaviour in the Zimbabwean mobile telecommunications sector. These and other studies underscore the model's adaptability and relevance across diverse geographical and socio-economic contexts, particularly in emerging markets, where quality of service remains a major concern.

Customer Experience

This study explores the relationship between SQ and CX as co-value creators in the telecommunications industry and this section explores key CX components. CX is the overall perception and feeling that a customer develops based on all interactions with a company, product, or service across the entire customer journey (Waqas *et al.,* 2021). Gustafsson *et al.* (2024) assert that CX encompasses rational and emotional responses at every stage of engagement, from initial awareness and purchase to service usage, support, and post-service evaluation. In the telecommunications domain, CX is shaped by digital and physical touchpoints**,** employee behaviour**,** ease of service access**,** and the emotional quality of interactions (Dağaşaner & Karaatmaca, 2025). The aforementioned CX components will be discussed in detail hereafter.

Emotional Engagement

Emotional engagement is a CX indicator of how customers connect emotionally with a brand and how they feel during and after their interactions with the service provider (du Preez & van Staden, 2024). Research by Kumar *et al.* (2022) show that emotionally engaged customers are likely to forgive service failures, promote the brand, and maintain longer-term relationships, even when price or functionality is not

of the highest quality. Ribeiro *et al.* (2024) also aver that organisations may struggle to link emotional metrics to operational decisions. Despite these challenges, Gao *et al.* (2023) opine that emotional engagement remains a source of competitive advantage in creating meaningful and memorable CXs. Emotional engagement goes beyond transactional satisfaction to reflect the depth and quality of the emotional connection between a customer and a service provider.

Ease of use and Convenience

Ease of use and convenience refer to how simple, accessible, and efficient it is for customers to interact with a service provider (Made *et al.,* 2021). Mobile telecommunications customers engage with complex services such as billing, data plans, mobile apps, customer support, and ease of use and convenience influence perceptions of SQ and customer satisfaction (Al-Momani *et al.,* 2009). Azzahra and Kusumawati (2023) note that in mobile telecommunications, the focus is on intuitiveness and user-friendliness and the ease with which customers can navigate a website or mobile app, understand service information, or complete tasks such as checking data balances or upgrading plans. Diaz-Aviles *et al.* (2015) however, oppose over-automation or poorly designed self-service tools, which could be unsuccessful if they fail to consider less tech-savvy users or lack human support when needed. For this reason, Suffian *et al.* (2019) encourage organisations to balance digital efficiency with human support.

Interactions with Digital and Human Touchpoints

Interactions with digital and human touchpoints are also a critical component that affects CX. According to Lütjens *et al.* (2022) interactions with digital and human touchpoints are moments where a customer engages with the service provider through digital or human channels. Pal (2023) insists that such interactions shape the customer's perception and influence satisfaction, trust, and loyalty. Muthaffar *et al.* (2024) opine that in the omnichannel environment, customers expect seamless, coherent experiences across both digital and human touchpoints. Organizations should recognize, however, that digital efficiency must be complemented by human empathy, especially when resolving complex or emotional issues (Alifah & Windasari, 2024). Although some customers value personal interaction or require specialized assistance, relying on automation without adequate human fallback could alienate such customers. Organizations should therefore also train their staff to deliver consistent and empathetic customer service.

Perceived Control and Personalization

According to Le *et al.* (2022), perceived control is the customer's sense of autonomy and influence over their service interactions. Joosten *et al.* (2017) aver that when customers feel in control, they are likely to report positive experiences, satisfaction, and reduced stress, even in complex or technical service environments. Guo *et al.* (2016), however, argue that rigid processes, unclear options, or forced

reliance on customer support could make customers feel powerless, leading to frustration and dissatisfaction. Cloarec *et al.* (2024) states, in a similar vein, that too much control overwhelms users, particularly those who are less tech-savvy. Nelly (2024) suggests that personalisation involves tailored data plans based on usage history, customised promotions, relevant notifications, or recognising customers by name and context in service interactions. Hemker *et al*. (2021), in contrast, state that excessive personalisation could raise privacy concerns**,** especially if customers feel that their data is not being used in a transparent manner.

Interrelationship between SQ and CX

It has been shown that SQ influences CX, with authors such as Alifah & Windasari (2024) and García-Pascual *et al.* (2023) concluding that these two aspects have a mutual relationship. In their research titled "CX about SQ in Online Environment: A Case of Iran", Sorooshian *et al.* (2013) indicate that high CX increases SQ perception. Similarly, Lemon & Verhoef (2016) affirm that memorable experiences raise consumer expectations and enhance their sensitivity to SQ. Empirical studies by Kim and Kim (2022) and Shyju *et al.* (2023) tested the mutual influence and confirmed the dynamic interplay between SQ and CX using structural equation modelling (SEM). These studies show that while SQ often serves as a predictor of CX, CX could also act as a mediator or feedback mechanism, thereby influencing SQ assessment. This reciprocal dynamic supports the Service-Dominant Logic premise that value is co-created through continuous interaction between firms and customers.

Although research has been undertaken globally on the relationship between SQ and CX, empirical studies within the Zimbabwean and the broader Sub-Saharan African telecommunications context remain limited (Manuere *et al.,* 2021). Musungwini *et al.* (2014) confirm that existing literature emanates primarily from studies carried out in developed economies, where infrastructure, regulatory frameworks, and consumer expectations differ from those in Sub-Saharan Africa, Mhlophe and Chinjova (2022) agree that there is lack of data-driven investigations into how SQ and CX interact and influence customer engagement, retention, and loyalty. Viriri and Phiri (2017), too, indicate that few studies in the region adopt bidirectional or recursive models that treat SQ and CX as mutually reinforcing constructs. This gap is critical, given the dynamic and often volatile operating environments that necessitate context-specific insights. Addressing this gap could offer a localised understanding of value co-creation and inform strategies for customer-centric innovation and service delivery.

Co-creation of Value in Telecommunications

Yusof and Rahim (2024) view co-creation of value as the collaborative development of service experiences through continuous contact between consumers and providers of these services. Customers are active participants in influencing and

evaluating service outcomes and within the telecommunications industry (Manser Payne *et al.,* 2021). SQ and CX are better understood as interactive and dynamic constructs, rather than unidirectional or cause-effect variables (Yrjola *et al.,* 2022). Correa-Gonzalez (2022) also opines that high SQ positively influences experiences, expectations, and feedback which, in turn, influences perceptions of quality, creating a mutual value-building scenario. In the quest to understand co-creation, measuring the reciprocal influence between SQ and CX using analytical tools such as structural equation modelling enables researchers to capture bidirectional effects and interdependencies. Direct user feedback is pivotal, as it shapes service delivery. This approach aligns with the S-D Logic Theory, which posits that value is not embedded in the product, but continuously co-created through interaction and context-specific engagement. Literature highlights a shift from linear to interactive models of understanding SQ and CX, reflecting the broader move towards co-creation of value in contemporary service environments. Studies support the view that high SQ enhances CX, while rich experiences reshape expectations and redefine perceptions of quality, forming a strong relationship**.** The review underscores the need for quantitative research that empirically tests the mutual influence between SQ and CX, particularly in emerging markets. This sets the stage for the present study, which seeks to bridge this gap by investigating how these constructs interact to co-create value in Zimbabwe's mobile telecommunications industry.

Results and Discussion

Response Rate

Table 1 indicates that out of a sample of 370 questionnaires sent out to participants, 313 responses were returned, resulting in a high response rate of 85%**,** which is commendable for a survey-based study. Of the questionnaires returned, 7 were deemed unusable as they were incomplete and owing to quality-related issues such as pattern responding, missing responses, and multiple selection. The remaining 306 valid and coded responses represented 83% of the total sample. The unreturned rate of 15% falls within acceptable limits and does not significantly undermine the robustness of the dataset. The response rate is also sufficiently high to enhance the reliability and generalisability of the study's findings, especially given its geographical spread across Zimbabwe's ten provinces.

Table 1. *Survey Response Rate*

Category	Number of respondents	Percent (%)
Total survey sample	370	100
Total returned	313	85
Unused	7	2
Unreturned	57	15
Total coded samples	**306**	**83**

Preliminary Exploratory Factor Analysis

Reliability

Cronbach's Alpha Test

As presented in Table 2, the reliability of the measurement scales was assessed using Cronbach's Alpha coefficient, which measures internal consistency among items within each construct. A Cronbach's Alpha value above 0.6 is generally considered acceptable for exploratory research (Sreejesh *et al.,* 2014). The results indicate that all SQ and CE components achieved acceptable levels of reliability, with coefficients exceeding the 0.6 threshold, except for the Reliability component.

Within the SQ dimensions, Tangibles (α = 0.67), Responsiveness (α = 0.762), Assurance (α = 0.754), and Empathy (α = 0.64) demonstrated satisfactory internal consistency. However, the *Reliability* component (α = 0.294*) fell below the acceptable limit, leading to its exclusion from subsequent analyses, as indicated by the asterisk in Table 2. Similarly, all CX components exhibited strong reliability, with Cronbach's Alpha coefficients ranging from 0.684 (Leisure) to 0.863 (Joy), confirming the internal consistency of these constructs. Overall, the results support the adequacy and reliability of the measurement scales, justifying their inclusion in further factor analysis.

Table 2. *Cronbach's Alpha Test values for SQ Variables*

SQ Component	**Number of Items (N)**	**Cronbach's Alpha**
Tangibles	3	0.67
Reliability	4	0.294*
Responsiveness	4	0.762
Assurance	4	0.754
Empathy	7	0.64
CX Component		
Joy	3	0.863
Mood	3	0.859
Leisure	3	0.684
Distinctiveness	3	0.851

Using the Cronbach Alpha test for reliability, all SQ attributes were deemed reliable, except the "reliable variable", which had a Cronbach Alpha of 0.294 that was below the cut-off of 0.64. With regards to CX, since all other attributes had a Cronbach's Alpha above 0.64, they were deemed reliable.

Sample Adequacy

After reliability tests, the sample adequacy was measured. According to Sreejesh *et al.* (2014), sample adequacy denotes the extent to which the variance in the observed variables is attributable to underlying factors. Higher sample adequacy values with

1.0 being the highest indicate the suitability of the data for factor analysis. Harrison *et al.* (2020) further posit that an adequate dataset is one that affords the researcher the capacity to formulate sound judgments and derive valid and reliable interpretations from the analysis.

Kaiser-Meyer-Olkin (KMO test)

Table 3. *Kaiser-Meyer-Olkin Test Values*

SQ		
Component	**Number of Items (N)**	**Keiser Meyer-Olkin Test (KMO)**
Tangibles	3	0.608
Reliability	4	Case deleted*
Responsiveness	4	0.757
Assurance	4	0.749
Empathy	7	0.795
CX Component		
Component	**Number of Items (N)**	**Keiser Meyer Test**
Joy	3	0.735
Mood	3	0.720
Leisure	3	0.661
Distinctiveness	3	0.725

To assess the suitability of the dataset for factor analysis, the Kaiser-Meyer-Olkin (KMO) Test and Bartlett's Test of Sphericity were performed. These tests evaluate sampling adequacy and the extent of intercorrelations among variables. According to Sreejesh *et al.* (2014:217), a KMO value greater than 0.6 is considered the minimum acceptable threshold, indicating sufficient sampling adequacy for factor extraction. Likewise, a significant Bartlett's Test ($p < 0.05$) confirms that the correlation matrix is not an identity matrix, thus validating the appropriateness of factor analysis.

As shown in Table 3, the KMO values for the SQ components ranged from 0.608 (Tangibles) to 0.795 (Empathy), demonstrating acceptable to good sampling adequacy across the constructs. The *Reliability* component was marked as "Case deleted", which suggests that the computation could not be performed, possibly due to issues such as missing data, insufficient variance, or multicollinearity among its items. The CX components also exhibited satisfactory KMO values, ranging from 0.661 (Leisure) to 0.735 (Joy), further confirming the adequacy of the sample for factor reduction analysis.

Bartlett Test

Bartlett's Test of Sphericity assesses whether the correlation matrix among

variables that is testing whether the variables share sufficient correlations to justify the use of factor analysis. A significant p-value ($p < 0.05$) indicates that the correlations between items are statistically significant, and that factor analysis is appropriate for the dataset. In Table 4, Bartlett Test for all components SQ and CX yielded p-values of 0.00, which are well below the 0.05 threshold. This suggests that there are strong interrelationships among the items within each component, confirming the suitability of the data for factor reduction or exploratory factor analysis. The only exception is the Reliability component, where the Bartlett's Test value is listed as CD* (Computation Disabled) because the case was deleted during Kaiser-Meyer-Olkin test.

Table 4. *Bartlett Test Values*

SQ Components		
Component	**Number of Items (N)**	**Bartlett Sphericity Test (P Value)**
Tangibles	3	0.00
Reliability	4	CD*
Responsiveness	4	0.00
Assurance	4	0.00
Empathy	7	0.00
CX components		
Component	**Number of Items (N)**	**Bartlett Sphericity Test**
Joy	3	0.00
Mood	3	0.00
Leisure	3	0.00
Distinctiveness	3	0.00

Factor Extraction or Reduction Analysis

The extraction method used for this study was principal axis factoring. According to Apuke (2017), principal factor analysis is appropriate for identifying latent constructs, rather than simply reducing the data. Since the study research question focused on the dimensions behind the variables, it was appropriate to use principal axis factoring. In each of the attitude components, factor reduction or factor analysis was carried out with the aid of an R Matrix (rotational matrix) to reduce data from a group of interrelated variables to a smaller set of factors. This was done to achieve parsimony by explaining the maximum amount of common variance in a factor correlation matrix using the smallest number of explanatory constructs for each component. A factor loading or factor score matrix with factor correlation coefficients for each component was then constructed, indicating the relationships between each variable in each component.

Table 5. *Factor Reduction and Extraction Output*

Component			**SQ**		
TANGIBLES	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Up-to-date equipment and technology	1	1.82	60.679	0.611	b*
Physical facilities	2	0.738	24.585	0.891	a*
visually appealing Well-dressed workers	3	0.442	14.736	0.466	c
RESPONSIVENESS	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Provides timeous service	1	2.339	58.475	0.742	b*
Keeps accurate records	2	0.714	17.581	0.559	d
Tells exact service time	3	0.401	12.49	0.759	a*
Prompt service	4	0.299	11.184	0.613	c*
ASSURANCE	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Employees willing to help	1	2.312	57.799	0.664	b*
Employees not too busy to help	2	0.710	17.756	0.559	d
Employees trustworthy	3	0.532	13.298	0.767	a*
Customer feels safe	4	0.446	11.147	0.655	c*
EMPATHY	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Employees polite	1	2.952	42.177	0.542	e
Institution supports employees	2	1.017	14.532	0.168	g
Individual employee attention	3	0.907	12.952	0.732	b*
Personal attention given to customer	4	0.722	10.312	0.793	a*
Employees know their job	5	0.644	9.205	0.709	c*
Employees appreciate customers (interest)	6	0.434	6.917	0.614	d*
Customer convenient operating hours	7	0.324	4.625	0.317	f
Component			**CX**		

JOY	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Pleasurable exp.	1	2.355	78.492	0.822	b*
Satisfying exp.	2	0.348	11.603	0.850	a*
Engaging exp.	3	0.297	9.905	0.797	c*
MOOD	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor Significance**
Good exp.	1	2.348	78.259	0.759	c*
Happy exp.	2	0.394	13.129	0.900	a*
Exciting exp.	3	0.258	8.612	0.805	b*
LEISURE	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Refreshing exp.	1	1.886	62.866	0.778	a*
Relaxing exp.	2	0.627	20.897	0.618	b*
Delightful exp.	3	0.487	16.237	0.606	c*
DISTINCTIVE	**Factor**	**Eigen value**	**% Variance**	**Factor matrix**	**Factor significance**
Unique exp.	1	2.314	77.145	0.778	c*
Memorable exp.	2	0.389	12.953	0.868	a*
Wonderful exp.	3	0.297	9.903	0.787	b*

Factors marked * were retained for further analysis. Each alphabetical letter denotes a corresponding hierarchical ranking, with a* indicating the highest value for each component and tangible or attribute. The cut-off point for the factors was 0.60> for each component. A total of 24 variables (12 in the Customer SQ component and 12 in the CX component) were retained for further regression analysis and structural model development after factor extraction, as indicated in Table 5.

Regression Analysis

Based on the retained 24 variables for each attitude component, multiple regression analyses were carried out using the generalised linear model (GLM) to determine the best possible combination of variables to explain the relationships between SQ and CX in the mobile telecommunications sector. Taking CX that the firms offered as the explanatory or independent variables (which they could manipulate to offer what they term the best service available), and the CX and satisfaction responses as the dependent variable, the following significant relationships were noted. The study results (Table 6) indicate that for the three telecommunications firms assessed, having up-to-date equipment and technology

induced significant ($p<0.05$) good experiences in customers ($p<0.041$). Customers derive significant ($p<0.05$) pleasurable experiences (C4, $p<0.000$) from dealing with a firm that tells them exactly when the service will be provided. Moreover, customers indicate that they had significant ($p<0.05$) satisfying ($p<0.001$), engaging ($p<0.001$), good ($p<0.014$), happy ($p<0.016$), and refreshing ($p<0.038$) experiences when the mobile telecommunications firm they were dealing with communicated clearly and precisely and honored service delivery deadlines. Customers reported significantly engaging ($p<0.041$) and unique ($p<0.038$) experiences when the mobile telecommunications firm tells them exactly when the service will be performed. Furthermore, customers had significantly good ($p<0.002$) and exciting experiences ($p<0.003$) when the mobile telecommunications firms provided prompt services. Customers had significant ($p<0.05$) happy ($p<0.0032$), exciting ($p<0.021$), relaxing ($p<0.007$), delightful ($p<0.021$) and wonderful ($p<0.012$) experiences when they perceived that the mobile telecommunication firm's employees they were dealing with were trustworthy. Moreover, customers indicated that they had significant ($p<0.05$) satisfying ($p<0.032$) and exciting experiences ($p<0.048$) if they felt safe when dealing with employees of firms they trusted. When customers perceived that the institution's employees knew exactly what their needs were, they reported having significantly ($p<0.05$) engaging ($p<0.000$), well/good ($p<0.003$), refreshing ($p<0.018$), and memorable ($p<0.019$) experiences. Customers had happy experiences ($p<0.043$) when they perceived that an institution had convenient operating hours.

For the other extracted explanatory SQ variables – a company with visually-appealing physical facilities, the firm's employees are always willing to help customers, give me individual attention, and give me personal attention – there were no significant relationships ($p>0.05$) with any of the assessed CXs' covariates. It should be indicated, however, that the absence of a statistically significant relationship between any of the extracted explanatory customer SQ variables and the dependent CX covariates does not always imply that there is no qualitative relationship.

Table 6. *Regression Output for Customer SQ and CX*

Independent/Explanatory variable	Dependent variable	P value
Up to date equipment and technology	Institution provides good experience (C4)	0.041
The institution tells the customer exactly the time service will be performed	Pleasurable experience (C1)	0.000
	Satisfying experience (C2)	0.001
	Engaging experience (C3)	0.001
	Good/well experience (C4)	0.014
	Happy experience (C5)	0.016
	Refresh experience (C7)	0.038
The institution tells the customer exactly when the service will be performed	Engaging experience (C3)	0.041
	Unique experience (C10)	0.038
The institution provides prompt service	Good /well experience (C4)	0.002
	Exciting experience (C6)	0.003
The institution's employees are trustworthy	Happy experience (C5)	0.032
	Exciting experience (C6)	0.021
	Relaxing experience (C8)	0.007
	Delightful experience (C9)	0.021
	Wonderful experience (C12)	0.012
I feel safe when conducting transactions with the institution's employees	Satisfying experience (C2)	0.032
	Exciting experience (C6)	0.048
The institution employees know what my needs are	Engaging experience (C3)	0.000
	Good experience (C4)	0.003
	Refreshing experience (C7)	0.018
	Memorable experience (C11)	0.019
The institution has convenient operating hours	Happy experience (C5)	0.043

Structural Equation Development (modelling)

The study constructed a point intervention, structural cause-effect relationship model/framework (a mediated Structural Equation Model, SEM), as indicated in Figure 1. Figure 1 derives from the interlinkage of the significant relationships between the explanatory SQ variables, and the dependent, often resonant, and stochastic CX revealed by the regression analysis shown in Table 7. Figure 1 indicates common interlinkages of both explanatory variables – (customer SQ) e.g. The institution provides service by the time promised, the institution's employees are trustworthy, and the institution's employees know what my needs are – and dependent CX variables e.g. Pleasurable experience, Good /well experience, amongst others.

The results revealed a lack of significant quantitative relationships among key marketing aspects. These include ambience, reflected in the visual appeal of a firm's physical facilities; customer care, demonstrated by employees' willingness to assist customers; and individualised attention, which is a critical element of SQ and care in marketing. Additionally, positive customer perceptions, as represented by CXs, were not strongly related to these factors. This finding suggests the need for a paradigm shift in the traditional marketing strategies adopted by telecommunication companies in Zimbabwe. Figure 1 above indicates a mediated two-way exchange of feedback from SQ impacting CX, and vice versa, representing the use of CX (positive or negative) to fine-tune the SQ. The mediatory pathways and information switch nodes (circles and rectangles) forms crucial aspects of a reversible relay of information. This indicates that rather than considering customer SQ as input, any established firm should view it as a reversible flexible controller of CX, which is informed and shaped by the CXs themselves, as indicated by the reversible and dotted arrows in Figure 1.

The dotted reversible lines inform the firms about the extent and significance of flexibility in customer SQ relies on CXs. This suggests that there is a > 6-step (3 forward arrows and 3 backward dotted and reverse arrows) mediation pathway between SQ and CX. The mediatory or node switches (depicted as circles or rectangles) represent the managerial component, which encompasses the key decision-making functions and personnel that can either strengthen or weaken the competitive foundation of Zimbabwe's highly competitive telecommunication industry. The results of the study suggest the emergence of a new paradigm shift, in which customer care is no longer the sole or primary determinant of CX. Instead, it forms part of a broader and more intricate set of customer service covariates, shaped by both precedent and antecedent customer experiences. This evolving perspective underscores the need for a dynamic and integrative approach to the delivery of SQ, These SQ provisions are meant to generate profitable, recurrent, and mutually beneficial customer experiences. This approach highlights the importance of strategic management and well-designed operational practices, emphasizing that the competitive success of telecommunication firms in Zimbabwe relies not on isolated service components, but on the synergistic alignment of all aspects of customer interaction and engagement.

Figure 1. *Relationship between SQ and CX in the Telecommunications Sector of Zimbabwe*

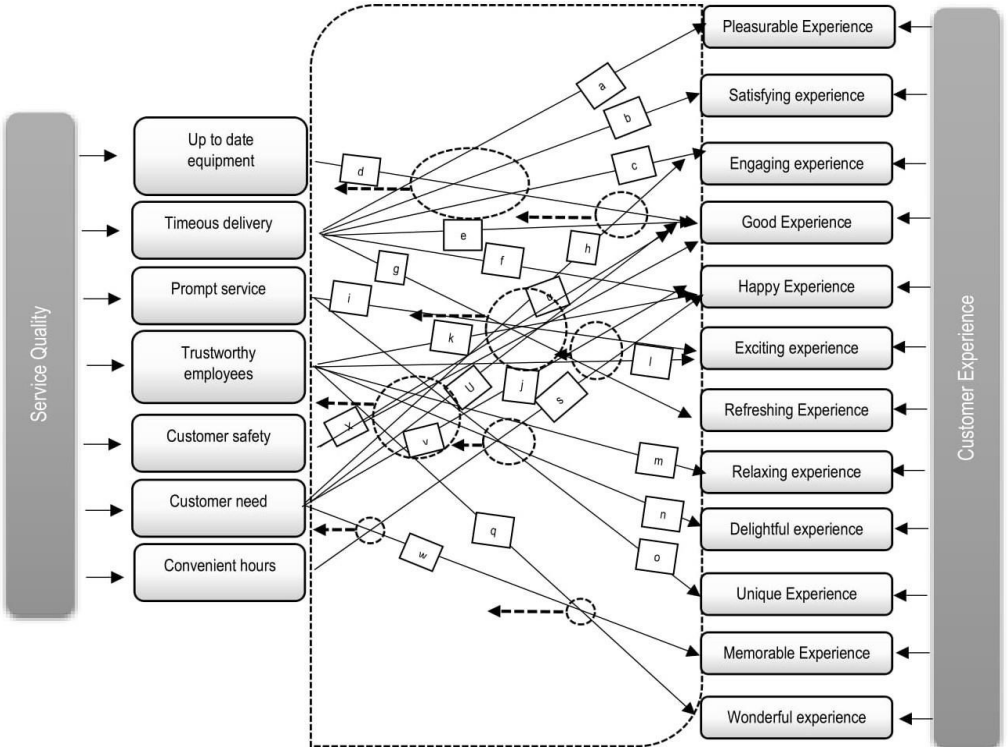

Table 7. *Key to Framework*

Service quality variable	Customer experience variable	Letter	P-value
Timeous delivery	Pleasurable experience	A	0.00
	Satisfying experience	b	0.001
	Engaging experience	C	0.001
	Good experience	E	0.014
	Happy experience	F	0.002
	Refreshing experience	G	0.038
Up to date equipment	Good experience	D	0.041
Prompt service	Exciting experience	I	0.002
	Unique experience	0	0.002
Trustworthy employees	Happy experience	k	0.032
	Exciting experience	l	0.021
	Relaxing experience	m	0.007
	Delightful	n	0.021
	Wonderful experience	g	0.012
Customer safety	Good experience	X	0.002
	Exciting experience	j	0.048
Customer needs	Engaging experience	h	0.000
	Good experience	u	0.003
	Happy experience	v	0.018
	Memorable experience	w	0.019
Convenient hours	Happy experience	t	0.043

The structural framework depicts how, in the Zimbabwean mobile telecommunications sector, timely delivery is also the strongest determinant that is significantly ($p<0.05$) related to six components, namely: pleasurable, good, satisfying, engaging, happy and refreshing experiences. Having trustworthy employees is the second strongest SQ component, which significantly relates to five components of CX: happy, exciting, relaxing, delightful and wonderful experiences. The framework also indicates that convenient operating hours are significantly ($p<0.05$) correlated to a happy experience only. Customer safety relates well to good and exciting experiences, while appreciation of customer needs significantly ($p<0.05$) relates to engaging, good, happy and memorable experiences. Prompt service supports exciting and unique experiences, whereas having up-to-date equipment has the least influence affecting good experience only.

In the mobile technology industry in Zimbabwe, good experience is the most valued experience variable, with five components associated with it: up-to-date equipment, timely delivery, trustworthy employees, customer safety and convenient hours. Happy experience is associated with timely service delivery, trustworthy employees and convenient hours, while exciting experience is linked with prompt service, trustworthy employees and customer safety. Engaging and refreshing experiences are associated with two SQ variables each, while pleasurable, satisfying, relaxing, delightful and unique experiences are associated with one SQ variable only (Table 7). The findings of the current study are at variance with studies conducted elsewhere. Sah *et al*. (2025), for example, emphasize that traditional marketing and customer SQ and care are the key drivers affecting the CX, and ultimately sales and profits.

This study appears to suggest that traditional marketing and customer quality care are not the key priorities for the mobile network customers in Zimbabwe. Hence the need to investigate the key drivers of customer satisfaction from a non-traditional perspective for these customers. The framework developed in this study identifies the critical hotspots, which are delineated by broken lines in Figure 1. The figure further illustrates the intervention points, indicated by broken arrows, where strategic adjustments to SQ can effectively influence corresponding CX within the context of Zimbabwean telecommunication firms. The emphasis is on re-examining the interrelationships of the explanatory variables for each firm and establishing the presence of internal validity and non-conformity of errors or residuals and outliers as represented by unique products or services borne out of the need to have competitive advantage. This entails re-examining all explanatory variables from both the quantitative and qualitative perspectives. Several scholars (Kim & Kim, 2022; Manser Payne *et al.,* 2021; Shyju *et al.,* 2023; Sorooshian, Salimi, Salehi, *et al.,* 2013; Tjahjaningsih *et al.,* 2021) researched the relationship between SQ and CE and came up with different frameworks.

The current study revealed a close link between SQ and CX in Zimbabwe's mobile telecommunications sector. It also established the relationship between the SQ variables and CX variables. The assertion by Sukendi *et al.* (2021) only highlighted that SQ is affected by CX, while the current study suggests an inter-reliant relationship between SQ and CX. The model by Sorooshian *et al* (2013) in the Iranian context only showed the link between SQ and the four elements of CX, without showing a

relationship between SQ and SX elements. García-Pascual *et al.* (2023) also highlight that organizations should concentrate on pragmatic experience, sociability experience, usability experience and hedonic experience in a quest to improve SQ.

The current study stresses that the link between SQ and CX is bidirectional, suggesting the two variables should co-exist and be mutually dependent. Kim and Kim (2022) conclude that customers' experiences specified by lengths of relationships with a service provider and frequency of service use do not influence all aspects of SQ. Koo *et al.* (2021) also highlight that longitudinal experiences affect expectations of service assurance perceptions relating to reliability and responsiveness, and the quality gap relating to assurance. The study by Kim and Kim (2022), Koo *et al*. (2021) and the current study use different variables to describe the relationship between SQ and CX, showing that the interdependence of the variables is common. Kadlubek and Grabara (2015), meanwhile, bring in the divergent view that customer expectation and CE affect SQ.

The present study agrees with the one by Tran C Nguyen (2022) that CX also affects SQ. However, the current study highlights a two-way link between the variables, differing significantly from the major findings by Kadlubek (2015). This study shows that SQ is the difference between what the customer was expecting and what they experienced, meaning that managers – in their quest to improve SQ – should always seek to minimize the gap between customer expectations and customer experience. Moreira *et al*. (2017), meanwhile, indicate that brand experience directly affects satisfaction, loyalty, trust and quality. According to their model, marketers should manage brand experiences, SQ, satisfaction and trust to build customer loyalty. This model does not clearly define the exact relationship between SQ and CX and relies on other elements such as satisfaction and trust. It is important to establish the relationship between the two variables (trust and satisfaction), which are complex and determine their overall influence on CX, to come up with appropriate interventions. Even though the current study outlines the actual relationship between the SQ and CX, it also acknowledges that good SQ and CX lead to customer satisfaction. Where Moreira *et al.* (2017) view trust because of SQ, the current study looks at trustworthiness as a variable that reflects SQ. Amoah et al. (2016) introduce another aspect of experience quality, which the authors acknowledge is determined by hedonics, peace of mind, recognition and involvement, leading to satisfaction. This model by Amoah et al. (2016) does not clearly outline the association between SQ and CE. Instead, it introduces a concept that needs to be backed by a relation matrix to explain the link between the variables, as highlighted by current study

Shrivastava (2017) acknowledges that the following attributes of CX affect online retail quality: customer awareness, economic value, customer support, security, fulfilment, personal attention, network customization and website visibility. The current study results unravel the relationship between SQ and CX variables. More significantly, this enables the researcher to determine specific items that are connected within this relationship. The results also reflected hotspots, or areas where the variable has significantly high interrelationships with dependent variables, as shown by the intersecting cross lines in Figure 1. These hotspots also revealed intervening points that will provide feedback or points of reference in realigning SQ. The results of the current study also revealed that SQ and CX are interrelated and affect each other.

Consequently, the implementation of SQ and CX is inherently interdependent, requiring that both be executed in a coordinated manner. Each component should inform and reinforce the other to ensure the delivery of an enhanced and cohesive service offering.

Conclusion

The study reflects on the critical role of SQ and CX as interdependent drivers in the co-creation of value within the mobile telecommunications sector. Instead of approaching these two aspects independently, the research results reflect a symbiotic relationship, where improvements in SQ enhance CX, and the resultant enriched experiences, in their turn, raise customer expectations and shape perceptions of quality. This study is a quantitative validation of the relationship between SQ and CX, particularly in emerging markets like Zimbabwe, where contextual factors may influence how these constructs interact. Despite the growing emphasis on SQ and CX in marketing literature, few studies have empirically examined their mutual influence, particularly in the context of telecommunications in emerging markets such as Zimbabwe. This study seeks to address this gap by investigating how SQ and CX interact, thereby contributing to the theoretical development of Service-Dominant Logic and Experiential Marketing Theory, while also providing practical insights for telecom service providers operating in similar markets. The study reflects a mediated two-way exchange between service quality and customer experience. It also reveals a new paradigm shift where customer care is no longer the key driver or imperative factor in determining customer experiences, but rather, part of a complex package of well-thought-out customer service covariates informed by precedent and antecedent customer experiences. While revealing that SQ has an impact on CX, the results show that customer experience also informs and shapes SQ. The study also highlights that the variables of SQ and CX exert varying degrees of influence on one another. This insight emphasizes the need for managers to identify the most impactful variables in each context to make more informed and effective strategic decision-making.

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