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Antecedences and consequences of customer satisfaction in mobile telecom services using PLS-SEM and NCA: The moderating role of involvement with ICTs

Abstract

Purpose - This study aims to examine the antecedents (such as service quality (call), network quality (internet), perceived value, and corporate image) and consequences (such as eWOM, customer loyalty, and post-purchase intention) of customer satisfaction with mobile telecommunication services, as well as the moderating role of customer involvement with Information and Communication Technologies (ICTs) between customer satisfaction, eWOM, customer loyalty, and post-purchase intention.

Methodology - We collected 295 usable mobile service user questionnaires and analyzed the data with partial least square-structural equation modeling and necessary condition analysis (NCA).

Findings – Service quality (call), network quality (Internet), perceived value, and corporate image significantly affect and are necessary conditions for customer satisfaction. Additionally, customer satisfaction influences electronic word-of-mouth, customer loyalty, and post-purchase intentions but these are not necessary conditions. Lastly, the results demonstrated that customer engagement with ICTs moderates the relationship between customer satisfaction and eWOM.

Originality - This is the first study to include the service quality of mobile phone calls and the network quality of the internet connection in the formation of customer satisfaction and its subsequent influence on eWOM, customer loyalty, and post-purchase intention through dual PLS-SEM and NCA methodological approaches. In addition, the results indicate that customer engagement with ICTs moderates the relationship between customer satisfaction and eWOM.

Keywords: Information and Communication Technologies (ICTs), mobile telecommunication services, customer satisfaction, antecedents, consequences, consumer involvement, NCA.

1. Introduction

Mobile telecommunications services emerged rapidly. Mobile devices, for example, smartphones have become the main communication tools in our daily life (Kuo et al., 2009). This can be evidenced by the Global System for Mobile Communications Association (2022) report, where there are 5.5 billion mobile subscribers globally. This sector substantially contributes to the national and global economy (Abeysinghe and Paul, 2005). In 2021, a 5% contribution to the global GDP (equivalent to $4.5 trillion) was mobile technologies and services generated. The growth of mobile telecommunication services is due to the wide accessibility of networks, internet services, and the growing need and supply of smartphones (Calvo-Porral and Nieto-Mengotti, 2019).

The mobile telecommunications market is highly competitive (Wang et al., 2019). Cellular phone telecommunication services have reached the point that makes communication accessible worldwide (Mahatanankoon et al., 2005). The speedy adoption and utilization of mobile devices and smartphones are now influencing the way of consumers' shopping behavior (Katoch and Rana, 2023; Ku and Chen, 2020) and the associate service attributes display a vital contribution in shaping customer satisfaction and loyalty (Chen et al., 2023). Achieving higher

customer satisfaction than their competitors to boost customer loyalty remains a continuous challenge for cellular phone telecommunication service providers (Calvo-Porral and Nieto-Mengotti, 2019; Hsu and Lin, 2023).

Technology is overgrowing and contained in many consumer products. To stay competitive, providers must keep abreast of the relevant innovative technologies and ICT (Lee et al., 2014). ICTs have formed a crucial part of everyone's lives. They enhance our quality of life while facilitating our work, providing entertainment, and enhancing social relationships. In the current technology era, various characteristics of telecommunication services allow consumers to use mobile services anywhere at any time, which in turn influence consumer behavior (Mahatanankoon et al., 2005; Rizki et al., 2023). High-involved customers are very cautious about the merits and demerits of mobile telecommunication services (Herold et al., 2016; Krishnamurthy and Kumar, 2018) and their ability to satisfy their interests, needs, and values (Zaichkowsky, 1985).

Prior research explained how the various characteristics of telecommunication services influence consumer satisfaction and consumer loyalty (Alzoubi and Inairat, 2020; Bamfo et al., 2018; Calvo-Porral and Nieto-Mengotti, 2019; Lee and Kim, 2023; Pang and Zhang, 2024). According to Calvo-Porral and Nieto-Mengotti (2019), service quality, corporate image, and perceived value influence customer satisfaction and loyalty, while customer involvement with ICTs moderates the relationship between service quality and loyalty. However, the effect of telecommunication service attributes particularly call service quality and internet service quality role in customer satisfaction, further, customer satisfaction role in eWOM, post-purchase intention and loyalty needs further investigation. Moreover, the earlier information technology research has centered primarily on adopting behavioral factors e.g., experience using computers,

emotional factors, or cognitive factors in computer competency or self-efficacy (Durndell and Haag, 2002; McGill et al., 2014; Yu et al., 2017). Thus, Calvo-Porral and Nieto-Mengotti (2019) suggested the moderating impact of involvement with ICTs in the association between customer satisfaction and loyalty. To our knowledge, no studies explore the moderating effects of customer involvement with ICTs on customer satisfaction and outcome variables like eWOM, customer loyalty, and purchasing intentions. For an overview of prior studies, see Appendix A. Specifically, this study assesses the antecedents and consequences of customer satisfaction based on the S-O-R model. Thus, we aim to evaluate the effect of quality of service (the quality of calls), the quality of the network (the quality of internet access), corporate image and perceived values (*Stimuli)* on customer satisfaction *(Organism)*. In addition, we examine the impact of customer satisfaction effect on electronic word of mouth (eWOM), customer loyalty, and post-purchase behavior (*Response).* Theoretically, it further extends the S-O-R framework by including a moderating factor (involvement with ICTs) between the *Organism* (consumer satisfaction) and *Response* (customer loyalty, eWOM, and post-purchase intentions).

Beyond its theoretical contribution, this study also offers a methodological advancement by combining Necessary Condition Analysis (NCA) with Partial Least Squares Structural Equation Modeling (PLS-SEM). The PLS-SEM relied on the cause-and-effect relationships based on sufficient logic. Whereas, the NCA is used to identify the necessary factors of outcome variables. NCA applies necessary logic to discover certain conditions that must be met to reach desired outcomes. The intended results cannot be obtained without the necessary condition (Dul, 2016, 2022). Thus, this study utilizes sufficient logic through PLS-SEM, which is further supported by the necessary conditions (NCA) for more robust outcomes.

2. Literature review

2.1 Stimulus to organism response (S-O-R) model

We developed the conceptual framework of the current study based on the S-O-R model initially proposed by Mehrabian and Russell (1974). According to this model, external cues (Stimuli) influence customer's internal feelings (Organism), which then influence their Responses (Abbasi et al., 2023). Initially, Mehrabian and Russell (1974) focused solely on emotional responses, whereas Bitner (1992) expanded the S-O-R model to include cognitive and physiological responses, broadening its application to service capes. The S-O-R model reflects an input-process-output model (M. J. Kim et al., 2020) and has been used in various contexts, such as in the banking service sector (Famiyeh et al., 2018) mobile-phone auctions (Chen and Yao 2018), customer engagement and co-creation in digital brand communities (Islam and Rahman, 2017; Kamboj et al., 2018), and in an online vlog and images endorsement of tourism (Abbasi et al., 2024; Abbasi et al., 2023). In the services sector, service quality indicates the Stimuli, consumers' perceived collective image (Organism), and customer loyalty signifies the Response (Alam and Noor, 2020). In technology adoption contexts, Kim and Lennon (2013) elongated the S-O-R framework to incorporate internal-website quality and external-reputation causes of information (Stimuli) influencing buying intentions (Response) by consumers' emotion and cognition (Organisms). Similarly, in this study, we employed a comprehensive S-O-R framework; where value-added attributes of telecommunation service including service quality (Call), network quality (Internet), perceived value and corporate image were the *stimuli*, consumer satisfaction denoted the *organism*, and eWOM, consumer loyalty, and post-purchase

intentions represented the *response*. Involvement with ICTs was a moderator in our model further extending previous S-O-R frameworks.

2.2 Research Hypotheses

2.2.1 Mobile Service quality and internet network quality

Service quality indicates how well a service meets customers' expectations (Nyadzayo and Khajehzadeh, 2016; Santos, 2003). Service quality from call quality in the telecommunication industry denotes an important Key Performance Indicator (KPI) for their employees. The service quality comes in the form of connectivity, call drop rate, network reach, and no hidden charges (Haryadi, 2016). Internet network quality comprises the strength of the uploading and downloading speed, link signals, and reduced errors (Thaichon et al., 2016). The service quality significantly leads to customer gratification from the acquired products or services (Dangaiso et al., 2024; Ong et al., 2024; Singh et al., 2025). Service quality in terms of voice calls, SMS and Internet are the primary offerings of any telecommunication provider company (Rasheed and Rashid, 2024). Service quality is a very substantial factor in the generation of satisfaction to customers (Kim et al., 2021; Thapa and Yogi, 2024). Prior studies support a robust causal relationship amid service quality in phone calls and an internet connection and customer satisfaction (Al Amin et al., 2024; Bamfo et al., 2018; Calvo-Porral and Nieto-Mengotti, 2019; Kuo et al., 2009; Pang and Zhang, 2024; Pereira et al., 2024; Thaichon et al., 2016). Similarly, in the current study, we suppose that the quality of calls and the internet can impact consumer satisfaction (Figure 1). Thus, the following hypotheses are posited:

H1: Service quality (call quality) is positively related to customer satisfaction.

H2: Network quality (Internet) is positively related to customer satisfaction.

2.2.2 Perceived value as an antecedent of consumer satisfaction

Perceived value refers to consumers' benefits obtained by the use of technology, services or products (Shah et al., 2021). The development of cellular technology has emerged as an essential milestone in terms of Internet and call communication (Gopi et al., 2022). Perceived value plays a critical in consumer purchase decisions (Lv et al., 2024). Thus it has been acknowledged as the key element behind a company's progress since it raises customers' readiness to purchase and reduces the alternative offerings' search intentions (Pura and Gummerus, 2007). Similarly, another study confirmed that perceived value is closely associated with satisfaction (Paulose and Shakeel, 2022). Besides, some studies also examined perceived value as an antecedent of satisfaction in telecommunication (Calvo-Porral and Nieto-Mengotti, 2019; Feng-Cheng, 2013; Kuo et al., 2009). Thus, we hypothesize that:

H3: Perceived value is positively related to customer satisfaction.

2.2.3 Corporate image and consumer satisfaction

Corporate image can be distinct as consumers' entire perception of an organization is based on their understanding, knowledge, and firm traits that they obtained and processed (Horng et al., 2018). The corporate-image is an immaterial resource that raises satisfaction, loyalty and customer citizenship behavior (Demir et al., 2021; M. Kim et al., 2020). Corporate image offers a competitive advantage, and it assists in advancing the essential value of an organization to get a fair market share (Özkan et al., 2020). Prior studies have established that corporate image is significantly linked with customer satisfaction (Calvo-Porral and Nieto-Mengotti, 2019; Chien and Chi, 2019; Demir et al., 2021; Kuo and Tang, 2013). Therefore, we propose:

H4: Corporate image is positively related to customer satisfaction.

2.2.4 Customer satisfaction and electronic word of mouth (eWOM)

Satisfaction is distinct as customers' feelings of pleasure, fulfillment, and desire towards a service supplier and its services based on their entire knowledge and experience with a firm (Thaichon and Quach, 2015). In other words, customer satisfaction is a post-selection evaluative reaction (Thakur, 2019). The satisfied customers will disseminate positive WOM about the firm over online channels or face-to-face with their friends and family circle about their goods and services experience (Rasheed and Rashid, 2024). Thus inner customer satisfaction has a positive role in eWOM buzz marketing (Ahmadinejad, 2019). Similarly, other studies also established satisfaction and eWOM association (Chinelato et al., 2023; Duarte et al., 2018; Serra-Cantallops et al., 2020; Thakur, 2019). In the e-service context, the quality of e-service significantly increases WOM (Rita et al., 2019). Thus, in telecommunications, we believe that customer satisfaction has a positive influence on eWOM. Therefore, we hypothesized that:

H5: Customer satisfaction is positively related to eWOM

2.2.5 Customer satisfaction and loyalty

Satisfaction is a fundamental aspect of anticipating and recognizing a person's reactions after an experience. The relationship between satisfaction and loyalty has been extensively examined and affirmed (Hallak et al., 2018; Teeroovengadum et al., 2018). Customer loyalty indicates a customer's positive attitude to repurchasing a specific service/product and thinking of only that service/product provider when the same service is required (Akıl and Ungan, 2022). In marketing, the foremost goal is to make customers satisfied and loyal to the brand (Thakur, 2019). Brand loyalty benefits in reducing marketing expenditures because loyal customers mostly continue purchasing the same product (Tahir et al., 2024). When mobile telecommunication services consumers use the service and are satisfied from the offering of the

network, they become more devoted and are more likely to buy from their current service provider (Demir et al., 2021; Thaichon et al., 2016). Ultimately consumer satisfaction translates into loyalty to the service supplier (Al Amin et al., 2024; Gazi et al., 2024; Karim and Rabiul, 2024). Thus, we offer the subsequent hypothesis:

H6: Customer satisfaction is positively related to customer loyalty

2.2.6 Customer satisfaction with post-purchase intentions

Purchase intentions are one of the greatest studied notions in literature (Bilal et al., 2024). The correlation between buying intentions and actual purchasing behavior has attracted significant research attention. Several investigations have shown a positive association between buying intentions and purchasing behavior (Lin et al., 2022; Nguyen and Wang, 2020). To stay competitive, marketing managers are interested to know about customer purchasing intentions to predict current and/or new service sales. Data on buying intentions can assist managers make marketing measurements and decisions on product demand (new and existing products), promotional techniques and market segmentation (Weismueller et al., 2020).

The accumulated customer satisfaction comes from a series of activities that will create the customers' belief of the distinctive value of the service provider over time and its impact on repurchase intentions (Wang et al., 2019). Thus, consumer satisfaction significantly link with purchase decision (Tahir et al., 2024). Similarly, in retail stores, the S-O-R theory is applied as customer satisfaction with the store (O) significantly impacts his/her revisit intentions (R) (Errajaa et al., 2022). Therefore, we hypothesize that:

H7: Customer satisfaction is positively related to post-purchase intention.

****Insert Figure 1 here****

2.2.7 The moderating role of consumer involvement with ICT

ICT is a diverse set of technological resources and tools applied to transfer, create, store, share or exchange information (Figure 1) (Farha et al., 2022; Ge and Yuan, 2024). Currently, ICTs resources and tools comprise of reach to telephone, computers and well speed internet (Adam, 2020). Besides that, the new component of ICTs like smart grids, the Internet of Things, data analytics, artificial intelligence and other types of technologies that assemble, process and transfer information (Bilal et al., 2024; Wang et al., 2021). We intended on consumers' enduring involvement in ICTs. Zaichkowsky (1985) considered customer involvement as an individual's importance to an object centered on their intrinsic needs, interests, and values. On the other hand, involvement is the motivation state that affects consumers' attention, comprehension process, and behavior (Ghali-Zinoubi and Toukabri, 2019; Kinard and Capella, 2006). Calvo-Porral and Nieto-Mengotti (2019) define ICT involvement as the degree of engagement individuals have with technology they wish to explore. Consequently, when the customer is highly engaged in ICT, technologies relevant to their interests stimulate and captivate their cognition without an intention to purchase.

The Elaboration Likelihood Model (ELM) developed by Petty et al. (1983), is the most well-known approach to explaining the function of involvement. ELM describes consumer attitude change via two routes: central and peripheral. According to the ELM, when the central route is taken, consumer attitudes vary as a consequence of careful consideration (both the advantages and disadvantages of a product/service are considered). In contrast, when the peripheral direction is taken, consumer attitudes change as a result of negative or positive cues linked with the product/service. Thus, the central or peripheral approach is chosen depending on

the extent of consumer involvement with a product category. Individuals making decisions in high-involvement settings will take the center route, whereas those in low-involvement situations will take the peripheral route (Tsiotsou, 2006).

According to ELM, when consumers are intensely involved in a product/service classification, there is a high probability that they will cautiously assess its demerits and merits (Herold et al., 2016; Krishnamurthy and Kumar, 2018). Thus, involvement is a function of the physical characteristics of the service, customer characteristics, and situational aspects associated with the purchase decision (Mittal, 1995). Several investigations have tested the moderating role of customer involvement in different contexts (Chao et al., 2022; Gligor and Bozkurt, 2022; Hwang et al., 2020). They showed that high-involved consumers use the extra time on eWOM information earlier generating brand expectations than less involved customers (Krishnamurthy and Kumar, 2018). Indeed, the level of customer involvement increases the association between customer satisfaction and loyalty (Dagger and David, 2012) and purchase intention increases too (Tata et al., 2019). One study reported that customer involvement with ICTs multiplies the effect of service quality on customer loyalty. Thus, it shows the significant moderating effect of involvement with ICTs (Calvo-Porzral and Nieto-Mengotti, 2019). Thus, we believe that if the customers are highly involved with ICTs, it can strengthen the connection between customer satisfaction, eWOM, customer loyalty towards mobile telecommunication services, and post-purchase intention. Hence, we postulate that:

H8: Customer involvement with ICTs positively moderates the relationship between customer satisfaction and eWOM.

H9: Customer involvement with ICTs positively moderates the relationship between customer satisfaction and loyalty.

H10: Customer involvement with ICTs positively moderates the relationship between customer satisfaction and purchase intentions.

3. Method

This study applied a questionnaire survey research method to uncover the developed relationships in the setting of mobile telecommunication services. The measures were adapted from prior studies, perceived value (three items), service quality (three items), and customer satisfaction (three items) from (Calvo-Porral and Nieto-Mengotti, 2019; Kuo et al., 2009), two items scale was adopted from Thaichon et al. (2016) to assess internet network quality; corporate image with three items from (Calvo-Porral and Nieto-Mengotti, 2019; Nguyen and Leblanc, 2001) and four items on customer loyalty from Yoo et al. (2000), three items of post-purchase intentions from (Kuo et al., 2009), five items of eWOM from (Serra-Cantallops et al., 2020) and three items of consumer involvement with ICT from (Mittal, 1995), see Appendix B. We used a five-point Likert scale (e.g., strongly agree (5) - strongly disagree (1) in all measures.

According to Faul et al. (2007), G*power analyses the lowest sample of 129 for our structural equation modeling. To gather the questionnaire data, we employed a purposive sampling method. Here investigator based on their knowledge and experience creates certain criteria and collect data from those individuals who fulfil the defined criteria (Sarstedt et al., 2018). Thus in the current study data were collected from those individuals who have been using local cellular networks for more than one year for calls and Internet (Frey, 2018). It also reduces the methodological risk of sampling bias (Abbasi et al., 2024). To ensure the relevance of the respondents certain screening questions were asked: such as, are you using a cellular network for the internet?; are you using a cellular network for calls for one year?

The primary sample included Pakistani individuals. In 2022 189.44 million mobile cellular subscribers were recorded (Taylor, 2024). Internet access in Pakistan is projected to amount to 45.90% of the total population in 2024 (Statista, 2024). Thus, we selected different telecommunication users from Rawalpindi and Islamabad cities. Hard copies of questionnaires were formally distributed. We distributed 370 survey questionnaires among the mobile network users and received 320 responses. After primary checks, we removed some questionnaires due to missing values (Cham et al., 2024) and dishonest answers, such as having a particular reply pattern straight-line, zigzag-line, and diagonal line (Hussain et al., 2023). The usable sample was 295. Table 1 shows the participants' profiles.

****Insert Table 1 here****

As for the suggestion of Podsakoff et al. (2003), we enacted Harmon's single-factor analysis, which exhibited that the leading protuberant single factor explained 40.5% of the observed variance, therefore the residual levels are well beneath the standard of 0.50 and showing that CMB is not an issue in the current data.

3.1 Analysis approach

The PLS-SEM technique is primarily suitable for investigating different variables together and investigating new interactions among them, as well as for developing and extending existing theories (Hair et al., 2019). Studies used PLS-SEM due to its strong capability to manage both reflective and formative constructs, as asserted and advocated by earlier research for evaluating complex study models (Hair et al., 2020).

3.2 Common Method Bias (CMB)

The probability of CMB is high in the cross-sectional study. Thus, it is crucial to measure CMB through Harman's single factor of 50% (Podsakoff et al., 2003) and VIF values less than 3 (Kock, 2015). These findings reveal that the entire value obtained from a single factor was 40.477, and the VIF value for the full collinearity test is less than the threshold of 3, showing no common method bias issue.

4. Results

We conducted the PLS-SEM assessment using the Smart PLS (v. 3.3.9) in a dual-step process (Hair et al., 2019). In the first stage, we estimated the model's measurement of reflective constructs for reliability and validity. In the second step, we tested the structural model and hypotheses testing. Reflective model reliability and validity can be measured through composite reliability, indicator reliability, and conversion validity (Hair et al., 2019). The indicator reliability is gauged by Cronbach's alpha which should be higher than 070. For convergent validity, we considered the AVE, which must be higher than 0.5, and outer loading should be larger than 0.7 (Hair et al., 2019). Our findings illustrate that all given values surpassed their respective threshold points except the outer loading of an item of eWOM. Moreover, for the full collinearity test, variance inflation factor (VIF) values should be less than the threshold of 3, showing no common method bias issue (Kock, 2015). Detailed results are available in Table 2.

****Insert Table 2 here****

Further, to assess the discriminant validity of our measurement model, we used the Heterotrait and Monotrait (HTMT) ratio of correlation. Henseler et al. (2015) recommend that the HTMT should be lower than 0.85. Our findings are less than the defined range; hence, there is no discriminant validity issue (see Table 3).

****Insert Table 3 here****

In the second stage, we assess the structural model. Smart PLS (V 3.3.9) bootstrapping was executed to test the defined hypotheses associations (Figure 2). The findings showed that service quality (H1: Path coefficient = 0.30, t = 5.06, f^2 =0.095, p < 0.001) and perceived value (H3: Path coefficient = 0.30, t = 4.71, f^2 =0.099, p < 0.001) significantly influenced customer satisfaction. Whereas the corporate image was moderated effect (H4: Path coefficient = 0.17, t = 2.67, f^2 =0.034, p < 0.01) and network quality (Internet) revealed a small but significant influence (H2: Path coefficient = 0.10, t = 2.15, f^2 =0.014, p < 0.05). Further, customer satisfaction was strongly influenced eWOM (H5: Path coefficient = 0.36, t = 5.17, f^2 =0.162, p < 0.001), customer loyalty (H6: Path coefficient = 0.49, t = 8.37, f^2 =0.313, p < 0.001) and post-purchase intention (H7: Path coefficient = 0.42, t = 7.23, f^2 =0.268, p < 0.001). Table 4 reports the findings.

****Insert Figure 2 here****

****Insert Table 4 here****

Table 5 and Figures 3, 4 and 5 show the moderation results. Specifically, customer involvement with ICTs strengthened the association between customer satisfaction and eWOM (H8: Path coefficient = 0.19, t = 3.49, p < 0.001). Thus, H5 is accepted. Whereas, customer involvement with ICTs displayed insignificant moderation between customer satisfaction and customer loyalty (H9: Path coefficient = 0.01, t = 0.94, p > 0.05), and post-purchase intention (H10: Path coefficient = 0.05, t = 0.88, p > 0.05). Hence, H9 and H10 were rejected. Thus this study established that the positive effect of customer satisfaction on eWOM is stronger when customer involvement with ICTs is higher. Similarly, customer involvement with ICTs shows minimal moderating effect in the link between customer satisfaction, customer loyalty, and post-purchase intention.

****Insert Table 5 and Figures 3, 4,5 here****

We also calculate the R^2 and Stone Geisser Q^2. R^2 is expressed in different levels, such as weaker, moderate and stronger predictive power: 0.25, 0.50, and 0.75, respectively (Hair et al., 2020). The findings displayed in Table 4 were in the range of 0.519 to 0.342, exhibiting viable predictive power. Further, the Q^2 value for endogenous variables must exceed the zero thresholds (Hair et al., 2019). Our Q^2 values from 0.220 to 0.340 surpassed the threshold criteria, establishing the model's predictive validity. Finally, F^2 value indactos the effect size of exogenous variable on an endogenous variable.

Comment [Rodoula T1]: Is this the correct table mentioned? Is this Table 6?

Comment [Rodoula T2]: ?

Comment [Rodoula T3]: I think there is a mistake here

4.1 NCA Results

The NCA test was performed to identify the necessary factors of outcome variables. NCA applies necessary logic to discover certain conditions that must be met to reach desired outcomes. The intended results cannot be obtained without the necessary condition (Dul, 2016, 2022). Dul (2016) defined the effect size (d) as greater than 0.1 refers to the necessity of an exogenous construct. NCA permutation test with 10,000 resamplings was performed to measure statistical significance. The findings revealed in Table 6 explain that corporate image (d=0.186, p-value < 0.001), network quality (Internet) (d=0.132, p-value < 0.001), perceived value (d=0.139, p-value < 0.001) and service quality (call quality) (d=0.265, p-value < 0.001) are necessary conditions for customer satisfaction. That further strengthened the findings of PLS-SEM. However, customer satisfaction was not a necessary condition for eWOM (d=0.036, p-value > 0.05), customer Loyalty (d=0.063, p-value > 0.05) and post-purchase intention (d=0.046, p-value > 0.05). Table 7 of the bottleneck explains the minimum levels of necessary conditions commanded for reaching specific outcome levels. Such as, at 90% of customer satisfaction, corporate image requires a minimum level of 3.271, and perceived value requires 3.325, service

quality (Call Quality) requires 3.000 and network quality (Internet) requires 2.000. Whereas, "NN" indicates no defined threshold is necessary for that outcome level. The comparison between NCA and PLS-SEM results is displayed in Table 8.

****Insert Tables 7 and 8 here****

5. Discussion and theoretical implications

We developed a conceptual framework of the antecedents and consequences of customer satisfaction and the moderating role of involvement in mobile telecommunication services. This study extends the S-O-R framework by including a moderating factor (involvement with ICTs) between the Organism (consumer satisfaction) and Response (customer loyalty, eWOM, and post-purchase intentions). The outcomes through NCA and PLS-SEM reveal that service quality (call), network quality (Internet), perceived value, and corporate image significantly affect and are necessary conditions for customer satisfaction. Additionally, customer satisfaction influences electronic word-of-mouth, customer loyalty, and post-purchase intentions but these are not necessary conditions. Lastly, the results demonstrated that customer engagement with ICTs moderates the relationship between customer satisfaction and eWOM.

The study findings yielded a significant effect of service quality (call quality) and network quality (Internet) on customer satisfaction. These results are consistent with previous findings in mobile telecommunication (Alam and Noor, 2020; Bamfo et al., 2018; Calvo-Porral and Nieto-Mengotti, 2019; Kuo et al., 2009; Thaichon et al., 2016). Most of the prior studies investigated only the service quality of the call or the network quality of the internet. However, in the present study, we used both of these in the same model. Therefore, we believe that mobile network providers should ensure that their service quality (call quality) and network quality (Internet) should be present to meet customer needs because high-quality calls and the Internet

are correlated with customer satisfaction. Besides, our study also proved that perceived value significantly influenced customer satisfaction, thus, the mobile network user who experienced high perceived value can be satisfied with the network. This finding is in line with prior studies of mobile network communication (Calvo-Porral and Nieto-Mengotti, 2019; Feng-Cheng, 2013; Kuo et al., 2009). Our findings also showed that corporate image is also associated with customer satisfaction. Previous empirical studies have also revealed the same results (Calvo-Porral and Nieto-Mengotti, 2019; Chien and Chi, 2019; Kuo and Tang, 2013). A good image of a mobile service provider in customers' minds can ultimately improve their satisfaction and create long-lasting relationships.

Interestingly, the empirical results support that customer satisfaction has a significant effect on eWOM, customer loyalty, and post-purchase intention. Previous literature also supports the notion that customer satisfaction is significantly associated with eWOM (Duarte et al., 2018; Nurittamont, 2020; Thakur, 2019), customer loyalty , and post-purchase intentions (Duarte et al., 2018; Kim, 2022; Kuo and Wu, 2012; Kuo et al., 2009; Menidjel et al., 2020). Based on their positive experiences satisfied customers write positive comments and reviews on social media about their telecommunication service providers. When consumers are satisfied, they do not easily switch to other telecommunication networks.

The statistical test established a novel theoretical contribution as we analyzed the moderating effect of customer involvement with ICTs. Customer involvement with ICTs has a positive moderating effect on the link between customer satisfaction and eWOM. As Krishnamurthy and Kumar (2018) stated, high-involvement consumers use extra time with eWOM information to generate expectations rather than low brand-involved consumers. Our research outcome undoubtedly shows that the association between customer satisfaction and eWOM can be more

robust due to high customer involvement with ICTs. Because highly involved customers have a high level of intention to write the review online (Tata et al., 2019). The highly involved customers have a higher tendency to use social media for communicating the relevant network offers and packages with others.

5.1 Theoretical implications

This study established a novel theoretical understanding of the extended S-O-R model in mobile telecommunication. We confirm the association of different antecedents and consequences of customer satisfaction and the moderating role of customer involvement with ICTs. This study has built on some theoretical contributions. For instance, the KPIs of mobile telecommunication employees indicated both connectivity and call quality are important (Haryadi, 2016). In our study, we have confirmed call service quality and internet network quality impact on customer satisfaction which were ignored previously. Future, our statistical test also confirms that the perceived value and corporate image influence customer satisfaction. Hence, it contributes significant insights into the literature.

We extend the consequences of customer satisfaction by including eWOM, customer loyalty and post-purchase intention. All these consequences are of equal importance for mobile telecommunication. However, in the current competitive telecommunication market, post-purchase behavior and eWOM have become incomparable indicators of the company's success.

Finally, the statistical test established a novel theoretical contribution as we analyzed the moderating role of customer involvement with ICTs. Customer involvement with ICTs has a positive moderating role between customer satisfaction and eWOM. This is the first study that

validated this novel moderating role. The highly involved customers have a higher tendency to use social media for communicating the relevant network offers and packages with others.

5.2 Practical implications

This study also produces relevant managerial implications for mobile service providers. Particularly, first, the cellular mobile phone service providers should carefully manage the call service quality, network quality of the internet, perceived value of service to customers, and corporate image to uplift customer satisfaction. Overall service-related values such as connectivity, call drop rate, network reach, no hidden charges (Haryadi, 2016), and internet downloading and uploading speed (Thaichon et al., 2016) are the most significant sources of customer satisfaction. Our findings confirm that mobile service providers should be vigilant about customer needs and service quality requirements. Customers hold an image of mobile service providers, which the latter can further improve by maintaining the quality of calls, internet, and other related service attributes.

Second, customer satisfaction significantly enhances eWOM, customer loyalty, and post-purchase intention in telecommunication services. Satisfied customers are more loyal to a service (Al Amin et al., 2024; Gazi et al., 2024; Karim and Rabiul, 2024). The mobile service provider should consider customer satisfaction by resolving service-related issues (such as connectivity, call drop rate, and network reach) and developing service offerings according to the customer's desires. Satisfied customers are not only loyal to service providers but also refer to others through eWOM on social media and purchase the packages again in the future.

Third, our findings showed that customer involvement with ICTs improves the strength of customer satisfaction on eWOM. Customer involvement with ICTs inconclusive in the association of satisfaction, loyalty of customer, and post-purchase intention. Suppose the

telecommunication network is designed and offered according to customers' needs, interests, and desires. In that case, there is a high probability of long-lasting customer relationships and customer-end promotion on social media.

6. Limitations and Future Research

Future studies may consider confirming our model with a larger sample size, looking at various industries and the purpose of using mobile telecommunication services. The generalizability of our results can be further improved, taking into account the rural consumers. Future research may also examine how culture or market saturation may impact customer satisfaction and its outcomes. Future research can also test the mediating impact of customer engagement and brand attachment with ICTs (Calvo-Porral and Nieto-Mengotti, 2019). To have an in-depth awareness of telecommunication and consumer behavior, it is necessary to understand how the offered services can be perceived to improve their value system and social networks.

References:

Abbasi, A. Z., Rather, R. A., Hooi Ting, D., Nisar, S., Hussain, K., Khwaja, M. G., & Shamim, A. (2024). Exploring tourism-generated social media communication, brand equity, satisfaction, and loyalty: A PLS-SEM-based multi-sequential approach. *Journal of Vacation Marketing*, *30*(1), 93-109.

Abbasi, A. Z., Tsiotsou, R. H., Hussain, K., Rather, R. A., & Ting, D. H. (2023). Investigating the impact of social media images' value, consumer engagement, and involvement on eWOM of a tourism destination: A transmittal mediation approach. *Journal of retailing and consumer services*, *71*, 103231.

Abdullah, N. N., Prabhu, M., & Othman, M. B. (2022). Analysing driving factors of customer satisfaction among telecommunication service providers in Kurdistan region. *International Journal of Engineering Business Management*, *14*, 18479790221111436.

Abeysinghe, D., & Paul, H. (2005). Privatization and technological capability development in the telecommunications sector: a case study of Sri Lanka Telecom. *Technology in Society*, *27*(4), 487-516.

Adam, I. O. (2020). Examining E-Government development effects on corruption in Africa: The mediating effects of ICT development and institutional quality. *Technology in Society*, *61*, 101245.

Ahmadinejad, B. (2019). The impact of customer satisfaction on word of mouth marketing (Case study: Bamilo online store). *SCIREA Journal of Management*, *3*(2), 40-52.

Akıl, S., & Ungan, M. C. (2022). E-Commerce Logistics Service Quality: Customer Satisfaction and Loyalty. *Journal of Electronic Commerce in Organizations (JECO)*, *20*(1), 1-19.

Al Amin, M., Muzareba, A. M., Chowdhury, I. U., & Khondkar, M. (2024). Understanding e-satisfaction, continuance intention, and e-loyalty toward mobile payment application during COVID-19: An investigation using the electronic technology continuance model. *Journal of Financial Services Marketing*, *29*(2), 318-340.

Alam, M. M. D., & Noor, N. A. M. (2020). The relationship between service quality, corporate image, and customer loyalty of Generation Y: An application of SOR paradigm in the context of superstores in Bangladesh. *SAGE Open*, *10*(2), 2158244020924405.

Albaity, M., & Melhem, S. B. (2017). Novelty seeking, image, and loyalty—The mediating role of satisfaction and moderating role of length of stay: International tourists' perspective. *Tourism management perspectives*, *23*, 30-37.

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*, 104981.

Alzoubi, H., & 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*, *8*(3), 579-588.

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, *12*(2), 125-143.

Bamfo, B. A., Dogbe, C. S. K., & Osei-Wusu, C. (2018). The effects of corporate rebranding on customer satisfaction and loyalty: Empirical evidence from the Ghanaian banking industry. *Cogent Business & Management*, *5*(1), 1413970.

Bilal, M., Zhang, Y., Cai, S., Akram, U., & Halibas, A. (2024). Artificial intelligence is the magic wand making customer-centric a reality! An investigation into the relationship between consumer purchase intention and consumer engagement through affective attachment. *Journal of retailing and consumer services*, *77*, 103674.

Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing*, *56*(2), 57-71.

Bolton, R. N., & Lemon, K. N. (1999). A dynamic model of customers' usage of services: Usage as an antecedent and consequence of satisfaction. *Journal of marketing research*, *36*(2), 171-186.

Calvo-Porral, C., & Nieto-Mengotti, M. (2019). The moderating influence of involvement with ICTs in mobile services. *Spanish Journal of Marketing - ESIC*, *23*(1), 25-43.

Cham, T.-H., Wei-Han Tan, G., Aw, E. C.-X., Ooi, K.-B., Jee, T.-W., & Pek, C.-K. (2024). Virtual reality in tourism: adoption scepticism and resistance. *Tourism Review*, *79*(2), 337-354.

Chao, C.-W., Hung, Y.-C., & Sun, L. (2022). Does Consumer Innovativeness Matter in Electrified Vehicle? The Moderation Role of Consumer Involvement. *Journal of International Consumer Marketing*, *34*(3), 298-311.

Chen, Q., Lu, Y., Gong, Y., & Xiong, J. (2023). Can AI chatbots help retain customers? Impact of AI service quality on customer loyalty. *Internet Research*(ahead-of-print).

Chien, L., & Chi, S. (2019). Corporate image as a mediator between service quality and customer satisfaction: difference across categorized exhibitors. *Heliyon*, *5*(3), e01307.

Chinelato, F. B., Oliveira, A. S. d., & Souki, G. Q. (2023). Do satisfied customers recommend restaurants? The moderating effect of engagement on social networks on the relationship between satisfaction and eWOM. *Asia Pacific Journal of Marketing and Logistics*, *35*(11), 2765-2784.

Dagger, T. S., & David, M. E. (2012). Uncovering the real effect of switching costs on the satisfaction-loyalty association. *European Journal of Marketing*, *46*(3/4), 447-468. https://doi.org/10.1108/03090561211202558

Dangaiso, P., Mukucha, P., Makudza, F., Towo, T., Jonasi, K., & Jaravaza, D. C. (2024). Examining the interplay of internet banking service quality, e-satisfaction, e-word of mouth and e-retention: a post pandemic customer perspective. *Cogent Social Sciences*, *10*(1), 2296590.

Demir, A., Budur, T., & Heshmati, A. (2021). Antecedents of trust, corporate image, and switching costs: a case in telecommunication services in the Kurdistan region of Iraq. *International Journal of Mobile Communications*, *19*(1), 53-74.

Demoulin, N., & Willems, K. (2019). Servicescape irritants and customer satisfaction: The moderating role of shopping motives and involvement. *Journal of business research*, *104*, 295-306.

Duarte, P., e Silva, S. C., & Ferreira, M. B. (2018). How convenient is it? Delivering online shopping convenience to enhance customer satisfaction and encourage e-WOM. *Journal of retailing and consumer services*, *44*, 161-169.

Dul, J. (2016). Necessary condition analysis (NCA) logic and methodology of "necessary but not sufficient" causality. *Organizational Research Methods*, *19*(1), 10-52.

Dul, J. (2022). Problematic applications of Necessary Condition Analysis (NCA) in tourism and hospitality research. *Tourism Management*, *93*, 104616.

Durndell, A., & Haag, Z. (2002). Computer self efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample. *Computers in human behavior*, *18*(5), 521-535.

Errajaa, K., Hombourger-Barès, S., & Audrain-Pontevia, A.-F. (2022). Effects of the in-store crowd and employee perceptions on intentions to revisit and word-of-mouth via transactional satisfaction: A SOR approach. *Journal of Retailing and Consumer Services*, *68*, 103087. https://doi.org/https://doi.org/10.1016/j.jretconser.2022.103087

Famiyeh, S., Asante-Darko, D., & Kwarteng, A. (2018). Service quality, customer satisfaction, and loyalty in the banking sector. *International Journal of Quality & Reliability Management*.

Farha, A. K. A., Obeidat, S. M., & Al-Kwifi, O. S. (2022). ICT effect on employees-related outcomes: higher education as a context. *Journal of Systems and Information Technology*, *24*(1), 32-54.

Feng-Cheng, T. (2013). Customer satisfaction, perceived value and customer loyalty: the mobile services industry in China. *African Journal of Business Management*, *7*(18), 1730-1737.

Frey, B. B. (2018). *The SAGE encyclopedia of educational research, measurement, and evaluation*. Sage Publications.

Gazi, M. A. I., Al Mamun, A., Al Masud, A., Senathirajah, A. R. b. S., & Rahman, T. (2024). The relationship between CRM, knowledge management, organization commitment, customer profitability and customer loyalty in telecommunication industry: The mediating role of customer satisfaction and the moderating role of brand image. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100227.

Ge, Y., & Yuan, R. (2024). Exploring decoupling relationship between ICT investments and energy consumption in China's provinces: Factors and policy implications. *Energy*, *286*, 129506.

Ghali-Zinoubi, Z., & Toukabri, M. (2019). The antecedents of the consumer purchase intention: Sensitivity to price and involvement in organic product: Moderating role of product regional identity. *Trends in Food Science & Technology*, *90*, 175-179.

Gligor, D., & Bozkurt, S. (2022). The impact of perceived brand interactivity on customer purchases. The mediating role of perceived brand fairness and the moderating role of brand involvement. *Journal of Product & Brand Management*, *31*(1), 96-109. https://doi.org/10.1108/JPBM-12-2019-2692

Gopi, B., Logeshwaran, J., & Kiruthiga, T. (2022). An Innovation in the Development of a Mobile Radio Model for a Dual-Band Transceiver in Wireless Cellular Communication. *BOHR International Journal of Computational Intelligence and Communication Network*, *1*(1), 20-25.

Goyal, K., & Kar, A. K. (2020). Determinants of customer satisfaction in telecommunication. In *Proceedings of ICETIT 2019* (pp. 754-761). Springer.

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of business research*, *109*, 101-110.

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

Hallak, R., Assaker, G., & El-Haddad, R. (2018). Re-examining the relationships among perceived quality, value, satisfaction, and destination loyalty: A higher-order structural model. *Journal of Vacation Marketing*, *24*(2), 118-135.

Haryadi, S. (2016). Performance Indicator of Telecommunication Service. *Researchgate. Available online at https://www. researchgate. net/publication/313101244_Performance_Indicator_of_Tele communication_Service*.
Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*(1), 115-135.
Herold, K., Tarkiainen, A., & Sundqvist, S. (2016). How the source of word-of-mouth influences information processing in the formation of brand attitudes. *Journal of Marketing for Higher Education*, *26*(1), 64-85.
Horng, J.-S., Liu, C.-H., Chou, S.-F., Tsai, C.-Y., & Hu, D. C. (2018). Does corporate image really enhance consumer's behavioural intentions? *Asia Pacific Journal of Tourism Research*, *23*(10), 1008-1020.
Hsu, C.-L., & Lin, J. C.-C. (2023). Understanding the user satisfaction and loyalty of customer service chatbots. *Journal of Retailing and Consumer Services*, *71*, 103211.
Hult, G. T. M., Sharma, P. N., Morgeson III, F. V., & Zhang, Y. (2019). Antecedents and consequences of customer satisfaction: do they differ across online and offline purchases? *Journal of Retailing*, *95*(1), 10-23.
Hussain, K., Abbasi, A. Z., Rasoolimanesh, S. M., Schultz, C. D., Ting, D. H., & Ali, F. (2023). Local food consumption values and attitude formation: the moderating effect of food neophilia and neophobia. *Journal of Hospitality and Tourism Insights*, *6*(2), 464-491. https://doi.org/10.1108/JHTI-08-2021-0214
Hwang, A. H. C., Oh, J., & Scheinbaum, A. C. (2020). Interactive music for multisensory e-commerce: The moderating role of online consumer involvement in experiential value, cognitive value, and purchase intention. *Psychology & Marketing*, *37*(8), 1031-1056.
Islam, J. U., & Rahman, Z. (2017). The impact of online brand community characteristics on customer engagement: An application of Stimulus-Organism-Response paradigm. *Telematics and informatics*, *34*(4), 96-109.
Jayasankaraprasad, C., & Vijaya Kumar, P. V. (2012). Antecedents and Consequences of Customer Satisfaction in Food & Grocery Retailing: An Empirical Analysis. *Decision (0304-0941)*, *39*(3).
Kamboj, S., Sarmah, B., Gupta, S., & Dwivedi, Y. (2018). Examining branding co-creation in brand communities on social media: Applying the paradigm of Stimulus-Organism-Response. *International Journal of Information Management*, *39*, 169-185.
Karim, R. A., & Rabiul, M. K. (2024). The relationships of corporate sustainability, customer loyalty, and word of mouth: the mediating role of corporate image and customer satisfaction. *Journal of Quality Assurance in Hospitality & Tourism*, *25*(3), 421-441.
Katoch, R., & Rana, A. (2023). Online spiritual meets (OSMs) and user behavior–A divine application of technology during COVID-19. *Computers in Human Behavior*, *139*, 107514.
Kim, J., & Lennon, S. J. (2013). Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention. *Journal of Research in Interactive Marketing*, *7*(1), 33-56. https://doi.org/10.1108/17505931311316734
Kim, M. (2022). How can I Be as attractive as a Fitness YouTuber in the era of COVID-19? The impact of digital attributes on flow experience, satisfaction, and behavioral intention. *Journal of retailing and consumer services*, *64*, 102778.

Kim, M., Yin, X., & Lee, G. (2020). The effect of CSR on corporate image, customer citizenship behaviors, and customers' long-term relationship orientation. *International Journal of Hospitality Management*, *88*, 102520.
Kim, M. J., Lee, C.-K., & Jung, T. (2020). Exploring consumer behavior in virtual reality tourism using an extended stimulus-organism-response model. *Journal of Travel Research*, *59*(1), 69-89.
Kim, Y., Wang, Q., & Roh, T. (2021). Do information and service quality affect perceived privacy protection, satisfaction, and loyalty? Evidence from a Chinese O2O-based mobile shopping application. *Telematics and informatics*, *56*, 101483.
Kinard, B. R., & Capella, M. L. (2006). Relationship marketing: the influence of consumer involvement on perceived service benefits. *Journal of Services Marketing*, *20*(6), 359-368. https://doi.org/10.1108/08876040610691257
Koay, K. Y., Cheah, C. W., & Chang, Y. X. (2022). A model of online food delivery service quality, customer satisfaction and customer loyalty: a combination of PLS-SEM and NCA approaches. *British Food Journal*, *ahead-of-print*(ahead-of-print). https://doi.org/10.1108/BFJ-10-2021-1169
Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (ijec)*, *11*(4), 1-10.
Krishnamurthy, A., & Kumar, S. R. (2018). Electronic word-of-mouth and the brand image: Exploring the moderating role of involvement through a consumer expectations lens. *Journal of retailing and consumer services*, *43*, 149-156.
Ku, E., & Chen, C.-D. (2020). Flying on the clouds: how mobile applications enhance impulsive buying of low cost carriers. *Service Business*, *14*(1), 23-45.
Kuo, C. W., & Tang, M. L. (2013). Relationships among service quality, corporate image, customer satisfaction, and behavioral intention for the elderly in high speed rail services. *Journal of Advanced Transportation*, *47*(5), 512-525.
Kuo, Y.-F., & Wu, C.-M. (2012). Satisfaction and post-purchase intentions with service recovery of online shopping websites: Perspectives on perceived justice and emotions. *International Journal of Information Management*, *32*(2), 127-138.
Kuo, Y.-F., Wu, C.-M., & Deng, W.-J. (2009). The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services. *Computers in human behavior*, *25*(4), 887-896.
Lee, D., Moon, J., Kim, Y. J., & Mun, Y. Y. (2015). Antecedents and consequences of mobile phone usability: Linking simplicity and interactivity to satisfaction, trust, and brand loyalty. *Information & Management*, *52*(3), 295-304.
Lee, J. M., & Kim, J. K. (2023). Effects of service quality of airline mobile application and individual characteristics on user satisfaction and intention to reuse. *International Journal of Mobile Communications*, *21*(1), 134-157.
Lee, S.-G., Lee, E.-b., & Yang, C.-G. (2014). Strategies for ICT product diffusion: the case of the Korean mobile communications market. *Service Business*, *8*(1), 65-81.
Lin, S.-C., Tseng, H.-T., & Shirazi, F. (2022). Consumer decision journey for online group buying: psychological and intentional procedure perspectives. *British Food Journal*.
Lv, Z., Zhao, W., Liu, Y., Wu, J., & Hou, M. (2024). Impact of perceived value, positive emotion, product coolness and Mianzi on new energy vehicle purchase intention. *Journal of retailing and consumer services*, *76*, 103564.

Mahatanankoon, P., Wen, H. J., & Lim, B. (2005). Consumer-based m-commerce: exploring consumer perception of mobile applications. *Computer standards & interfaces*, *27*(4), 347-357.
Mbango, P. (2019). The role of perceived value in promoting customer satisfaction: Antecedents and consequences. *Cogent Social Sciences*, *5*(1), 1684229.
McGill, T., Koppi, T., & Armarego, J. (2014). ICT industry involvement with ICT education and research in universities: Industry perceptions. *Innovation in teaching and learning in information and computer sciences*, 1-18.
Mehrabian, A., & Russell, J. A. (1974). An approach to environmental psychology Cambridge. *MA: Massachusetts Institute of Technology*, *8*.
Menidjel, C., Benhabib, A., Bilgihan, A., & Madanoglu, M. (2020). Assessing the role of product category involvement and relationship proneness in the satisfaction–loyalty link in retailing. *International Journal of Retail & Distribution Management*, *48*(2), 207-226. https://doi.org/10.1108/IJRDM-01-2019-0020
Mittal, B. (1995). A comparative analysis of four scales of consumer involvement. *Psychology & marketing*, *12*(7), 663-682.
Nguyen, N., & Leblanc, G. (2001). Corporate image and corporate reputation in customers' retention decisions in services. *Journal of Retailing and Consumer Services*, *8*(4), 227-236.
Nguyen, N., & Wang, J. (2020). Consumers' perceptions and responses towards online retailers' CSR. *International Journal of Retail & Distribution Management*.
Nurittamont, W. (2020). Enhancing Electronic Word of Mouth through Customer Satisfaction for Young Customers' Mobile Phone Banking Applications. *International Journal of Innovation, Creativity and Change*, *13*(12), 661-673.
Nyadzayo, & Khajehzadeh. (2016). Effects of Service Quality, Price and Promotion on Customers' Purchase Decision. 256.
Ong, A. K. S., German, J. D., Dangaran, P. C., Paz, J. J. B., & Macatangay, R. R. G. (2024). Service quality and customer satisfaction analysis among motorcycle taxi transportation in the Philippines through SERVQUAL dimensions and social exchange theory. *Case Studies on Transport Policy*, *15*, 101139.
Özkan, P., Süer, S., Keser, İ. K., & Kocakoç, İ. D. (2020). The effect of service quality and customer satisfaction on customer loyalty. *International Journal of Bank Marketing*, *38*(2), 384-405. https://doi.org/10.1108/IJBM-03-2019-0096
Pang, H., & Zhang, K. (2024). Determining influence of service quality on user identification, belongingness, and satisfaction on mobile social media: Insight from emotional attachment perspective. *Journal of retailing and consumer services*, *77*, 103688.
Paulose, D., & Shakeel, A. (2022). Perceived experience, perceived value and customer satisfaction as antecedents to loyalty among hotel guests. *Journal of Quality Assurance in Hospitality & Tourism*, *23*(2), 447-481.
Pereira, G. V., Dewi, L. K. C., & da Conceição Soares, A. (2024). The Influence of Marketing Mix and Service Quality on Purchasing Decisions Mediated by Consumer Satisfaction at Timor Telecom. *Journal of Digitainability, Realism & Mastery (DREAM)*, *3*(02), 8-21.
Petty, R. E., Cacioppo, J. T., & Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. *Journal of consumer research*, *10*(2), 135-146.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879.
Pura, M., & Gummerus, J. (2007). *Discovering perceived value of mobile services*.
Rahimizhian, S., Ozturen, A., & Ilkan, M. (2020). Emerging realm of 360-degree technology to promote tourism destination. *Technology in Society*, *63*, 101411.
Rasheed, R., & Rashid, A. (2024). Role of service quality factors in word of mouth through student satisfaction. *Kybernetes*, *53*(9), 2854-2870.
Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, *5*(10), e02690.
Rizki, M., Joewono, T. B., Irawan, M. Z., Belgiawan, P. F., Bastarianto, F. F., & Prasetyanto, D. (2023). Investigating influencing factors for ICT adoption that changes travel behavior in response to the COVID-19 outbreak in Indonesia. *Case Studies on Transport Policy*, 100947.
Sanchez-Franco, M. J. (2009). The moderating effects of involvement on the relationships between satisfaction, trust and commitment in e-banking. *Journal of Interactive Marketing*, *23*(3), 247-258.
Santos, J. (2003). E-service quality: a model of virtual service quality dimensions. *Managing Service Quality: An International Journal*, *13*(3), 233-246. https://doi.org/10.1108/09604520310476490
Sarstedt, M., Bengart, P., Shaltoni, A. M., & Lehmann, S. (2018). The use of sampling methods in advertising research: A gap between theory and practice. *International Journal of Advertising*, *37*(4), 650-663.
Seo, S. (2022). When Female (Male) Robot Is Talking To Me: Effect of service robots' gender and anthropomorphism on customer satisfaction. *International Journal of Hospitality Management*, *102*, 103166.
Serra-Cantallops, A., Cardona, J. R., & Salvi, F. (2020). Antecedents of positive eWOM in hotels. Exploring the relative role of satisfaction, quality and positive emotional experiences. *International Journal of Contemporary Hospitality Management*.
Shah, S. K., Zhongjun, T., Sattar, A., & XinHao, Z. (2021). Consumer's intention to purchase 5G: Do environmental awareness, environmental knowledge and health consciousness attitude matter? *Technology in Society*, *65*, 101563.
Shen, Y.-C., Lin, H.-Y., Chou, C. Y., Wu, P. H., & Yang, W.-H. (2022). "Yes, I know you": the role of source familiarity in the relationship between service adaptive behavior and customer satisfaction. *Journal of Service Theory and Practice*, *32*(5), 620-639. https://doi.org/10.1108/JSTP-01-2022-0017
Singh, G., Slack, N., & Sharma, S. (2025). Influence of supermarket self-checkout service quality, customer vulnerability and risk perception during emerging pandemics on Australian customer behaviour. *The TQM Journal*.
Srivastava, M., & Kaul, D. (2014). Social interaction, convenience and customer satisfaction: The mediating effect of customer experience. *Journal of retailing and consumer services*, *21*(6), 1028-1037.
Statista. (2024). Digital & Connectivity Indicators - Pakistan. *Statista*. https://www.statista.com/statistics/501049/number-of-mobile-cellular-subscriptions-in-pakistan/#:~:text=The%20number%20of%20mobile%20cellular,subscriptions%20registered%20in%20the%20country.

Tahir, A. H., Adnan, M., & Saeed, Z. (2024). The impact of brand image on customer satisfaction and brand loyalty: A systematic literature review. *Heliyon*.

Tata, S. V., Prashar, S., & Parsad, C. (2019). Shoppers' intention to provide online reviews: The moderating role of consumer involvement. *Journal of Electronic Commerce in Organizations (JECO)*, *17*(3), 35-53.

Taylor, P. (2024). Number of mobile cellular subscriptions in Pakistan from 2000 to 2023 (in millions). *Statista*. https://www.statista.com/statistics/501049/number-of-mobile-cellular-subscriptions-in-pakistan/#:~:text=The%20number%20of%20mobile%20cellular,subscriptions%20registered%20in%20the%20country.

Teeroovengadum, V., Seetanah, B., & Nunkoo, R. (2018). The Influence of Travelers' Satisfaction with Destination Tertiary Services on Loyalty. *Tourism Analysis*, *23*(4), 567-570.

Thaichon, P., Lobo, A., & Quach, T. N. (2016). The moderating role of age in customer loyalty formation process. *Services Marketing Quarterly*, *37*(1), 52-70.

Thaichon, P., & Quach, T. N. (2015). The relationship between service quality, satisfaction, trust, value, commitment and loyalty of Internet service providers' customers. *Journal of Global Scholars of Marketing Science*, *25*(4), 295-313.

Thakur, R. (2019). The moderating role of customer engagement experiences in customer satisfaction–loyalty relationship. *European Journal of Marketing*.

Thapa, M., & Yogi, P. N. (2024). Service Quality and Customer Satisfaction With Reference to Cellular Phone Industry of Nepal. *The Batuk*, *10*(1), 39-54.

Tsiotsou, R. (2006). The role of perceived product quality and overall satisfaction on purchase intentions. *International journal of consumer studies*, *30*(2), 207-217.

Twum, K. K., Kosiba, J. P. B., Hinson, R. E., Gabrah, A. Y. B., & Assabil, E. N. (2022). Determining mobile money service customer satisfaction and continuance usage through service quality. *Journal of Financial Services Marketing*, 1-13.

Uddin, M. B., & Akhter, B. (2012). Customer satisfaction in mobile phone services in Bangladesh: A survey research. *Management & Marketing Journal*, *10*(1).

Wang, D., Zhou, T., & Wang, M. (2021). Information and communication technology (ICT), digital divide and urbanization: Evidence from Chinese cities. *Technology in Society*, *64*, 101516.

Wang, W.-T., Ou, W.-M., & Chen, W.-Y. (2019). The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective. *International Journal of Information Management*, *44*, 178-193.

Weismueller, J., Harrigan, P., Wang, S., & Soutar, G. N. (2020). Influencer endorsements: How advertising disclosure and source credibility affect consumer purchase intention on social media. *Australasian marketing journal*, *28*(4), 160-170.

Yoo, B., Donthu, N., & Lee, S. (2000). An examination of selected marketing mix elements and brand equity. *Journal of the Academy of Marketing Science*, *28*(2), 195-211.

Yu, T.-K., Lin, M.-L., & Liao, Y.-K. (2017). Understanding factors influencing information communication technology adoption behavior: The moderators of information literacy and digital skills. *Computers in human behavior*, *71*, 196-208.

Zaichkowsky, J. L. (1985). Measuring the Involvement Construct. *Journal of Consumer Research*, *12*(3), 341-352. https://EconPapers.repec.org/RePEc:oup:jconrs:v:12:y:1985:i:3:p:341-52

Table 1. Sample demographics

Respondents	Demographic	Frequencies (%)
Gander		
	Male	48.8
	Female	51.2
Age		
	18-23	17.3
	24-32	54.9
	33-39	20
	40-50	6.77
	50 or above	1.03
Qualification		
	Inter	2
	Bachelor	37.3
	Master	51.5
	PhD or above	9.2
Income		
	0-10000	22.7
	10001-20000	10.9
	20001-40000	21.4
	40001-80000	24.7
	80001-160000	13.2
	160001 and above	7.1
Living City		
	Islamabad	70.5
	Rawalpindi	29.5
Occupation/Job		
	Managerial/ Professional	60
	Own Business	8.81
	Technicians and associate professionals	10.2
	Clerical, sales, service and support worker	3.73
	Armed force occupation Or Other	1.02
	No job	12.5
	Freelancer	3.74
Used Network		
	Jazz/Warid	19.6
	Ufone	46.1
	Telenor	21.7
	Zong	12.6

Table 2. Results of the assessment of the measurement model

Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)	VIF
Service quality (call quality)	SQ1	0.83	0.76	0.86	0.67	1.46
	SQ2	0.79				1.60
	SQ3	0.84				1.58
Network quality (Internet)	NQ1	0.87	0.70	0.87	0.77	1.42
	NQ2	0.88				1.42
Perceived value	PV1	0.80	0.75	0.86	0.67	1.42
	PV2	0.83				1.66
	PV3	0.82				1.50
Corporate image	CI1	0.75	0.75	0.86	0.67	1.37
	CI2	0.86				1.68
	CI3	0.84				1.59
Customer satisfaction	SAT1	0.84	0.78	0.87	0.69	1.66
	SAT2	0.82				1.64
	SAT3	0.84				1.54
eWOM	eWOM1	0.87	0.88	0.92	0.74	2.30
	eWOM2	0.90				2.92
	eWOM3	0.87				2.47
	eWOM4	0.80				2.03
Customer loyalty	LOY1	0.79	0.80	0.87	0.63	1.82
	LOY2	0.83				1.91
	LOY3	0.84				1.59
	LOY4	0.70				1.42
Post-purchase intention	PI1	0.87	0.84	0.90	0.76	2.01
	PI2	0.86				1.90
	PI3	0.88				2.04
Customer involvement with ICTs	CIV1	0.91	0.87	0.92	0.80	2.48
	CIV2	0.88				2.19
	CIV3	0.89				2.30

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	Corporate image	Customer involvement with ICTs	Customer loyalty	Customer satisfaction	Network quality (Internet)	Perceived value	Post-purchase intention	Service quality (call quality)	eWOM
Corporate image									
Customer involvement with ICTs	0.55								
Customer loyalty	0.73	0.48							
Customer satisfaction	0.75	0.48	0.73						
Network quality (Internet)	0.55	0.37	0.63	0.59					
Perceived value	0.79	0.48	0.85	0.82	0.64				
Post-purchase intention	0.80	0.68	0.78	0.70	0.47	0.77			
Service quality (call quality)	0.80	0.44	0.79	0.80	0.61	0.80	0.73		
eWOM	0.54	0.52	0.56	0.54	0.41	0.66	0.65	0.59	

Comment [Rodoula T4]: Please add this table in an editable formt.

Table 4. Testing of Hypotheses

Direct Effect Hypothesis	Path Coefficient	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	R^2	Q^2	F^2	Results
Service Quality -> Customer Satisfaction	0.30	0.30	0.06	5.06	**0.000**	0.52	0.35	0.095	Accepted
Perceived Value -> Customer Satisfaction	0.30	0.30	0.06	4.71	**0.000**			0.099	Accepted
Corporate Image -> Customer Satisfaction	0.17	0.17	0.07	2.67	**0.008**			0.034	Accepted
Network Quality -> Customer Satisfaction	0.10	0.09	0.04	2.15	**0.032**			0.014	Accepted
Customer Satisfaction -> Customer	0.49	0.49	0.06	8.37	**0.000**	0.37	0.22	0.313	Accepted

Comment [KH5]: ?????

Loyalty									
Customer Satisfaction -> Ewom	0.36	0.36	0.07	5.17	**0.000**	0.34	0.23	0.162	Accepted
Customer Satisfaction -> Post-Purchase Intention	0.42	0.42	0.06	7.23	**0.000**	0.48	0.35	0.268	Accepted

Table 5. Moderating Hypotheses

	Path Coefficient	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Results
Customer Satisfaction* -> Customer involvement with ICTs -> eWOM	0.19	0.19	0.05	3.49	0.000	Accepted
Customer Satisfaction* -> Customer involvement with ICTs-> Customer Loyalty	0.01	0.01	0.06	0.07	0.94	Rejected
Customer Satisfaction* -> Customer involvement with ICTs -> Post-Purchase Intention	0.05	0.05	0.06	0.88	0.38	Rejected

Table 6. NCA effect sizes

Hypotheses representing necessary condition	Effect size	P value
Corporate => Customer satisfaction	0.186	0.000
Network quality (Internet) => Customer satisfaction	0.132	0.000
Perceived value => Customer satisfaction	0.139	0.000
Service quality (call quality) => Customer satisfaction	0.265	0.000
Customer satisfaction=> eWOM	0.036	0.78
Customer satisfaction=> Customer loyalty	0.063	0.236
Customer satisfaction=> post-purchase intention	0.046	0.541

Comment [Rodoula T6]: This table needs to become in an editable form and indicated in the text.

Table 7. Bottleneck table (percentages)

	Customer satisfaction	Corporate image	Service quality (call quality)	Network quality (Internet)	Perceived value
0.00%	1.318	NN	NN	NN	NN
10.00%	1.686	NN	NN	NN	NN
20.00%	2.054	2.175	1.676	NN	NN
30.00%	2.422	2.175	2.000	2.000	1.688
40.00%	2.791	2.175	2.000	2.000	1.688
50.00%	3.159	2.175	2.000	2.000	1.688
60.00%	3.527	2.729	2.000	2.000	1.688
70.00%	3.895	3.000	2.000	2.000	1.688
80.00%	4.264	3.271	3.000	2.000	3.325
90.00%	4.632	3.271	3.000	2.000	3.325
100.00%	5.000	3.271	3.000	3.000	3.325

Continued…

	eWOM	Customer satisfaction	Customer loyalty	Customer satisfaction	Post-purchase intention	Customer satisfaction
0.00%	1.000	NN	1.000	NN	1.000	NN
10.00%	1.400	NN	1.400	NN	1.400	NN
20.00%	1.800	NN	1.800	NN	1.800	NN
30.00%	2.200	NN	2.200	NN	2.200	NN
40.00%	2.600	NN	2.600	NN	2.600	NN
50.00%	3.000	NN	3.000	NN	3.000	NN
60.00%	3.400	NN	3.400	NN	3.400	NN
70.00%	3.800	NN	3.800	NN	3.800	NN
80.00%	4.200	NN	4.200	NN	4.200	2.000
90.00%	4.600	2.000	4.600	2.000	4.600	2.000
100.00%	5.000	2.000	5.000	3.666	5.000	2.000

Table 8. Interpretation of findings

Scenario	PLS-SEM Results	NCA Results	Conclusion
Service Quality (Call Quality)	Significant influence on customer satisfaction (H1: $\beta = 0.30$, $p < 0.001$).	Necessary condition for customer satisfaction ($d = 0.265$, $p < 0.001$).	An average increase in service quality (Call Quality) generally leads to an improvement in customer satisfaction. However, a specific threshold of service quality must be met (necessary) for the outcome of customer satisfaction to occur.
Network Quality (Internet)	Small but significant influence on customer satisfaction (H2: $\beta = 0.10$, $p < 0.05$).	Necessary condition for customer satisfaction ($d = 0.132$, $p < 0.001$).	An average increase in network quality (Internet) generally leads to an improvement in customer satisfaction. However, a specific threshold of network quality must be met (necessary) for the outcome of customer satisfaction to occur.
Perceived Value	Significant influence on customer satisfaction (H3: $\beta = 0.30$, $p < 0.001$).	Necessary condition for customer satisfaction ($d = 0.139$, $p < 0.001$).	An average increase in perceived value generally leads to an improvement in customer satisfaction. However, a specific threshold of perceived value must be met (necessary) for the outcome of customer satisfaction to occur.
Corporate Image	Moderating effect on customer satisfaction (H4: $\beta = 0.18$, $p < 0.01$).	Necessary condition for customer satisfaction ($d = 0.186$, $p < 0.001$).	An average increase in corporate image generally leads to an improvement in customer satisfaction. However, a specific threshold of corporate image must be met (necessary) for the outcome of customer satisfaction to occur.
Customer Satisfaction	Strong influence on eWOM (H5: $\beta = 0.36$, $p < 0.001$), customer loyalty (H6: $\beta = 0.49$, $p < 0.001$), and post-purchase intention (H7: $\beta = 0.42$, $p < 0.001$).	Not a necessary condition for eWOM ($d = 0.036$, $p > 0.05$), customer loyalty ($d = 0.063$, $p > 0.05$), and post-purchase intention ($d = 0.046$, $p > 0.05$).	An average increase in customer satisfaction typically enhances the outcomes such as eWOM, customer loyalty and post-purchase intention, but no specific minimum level of customer satisfaction is required (necessary) for the outcome of eWOM, customer loyalty and post-purchase intention to occur.

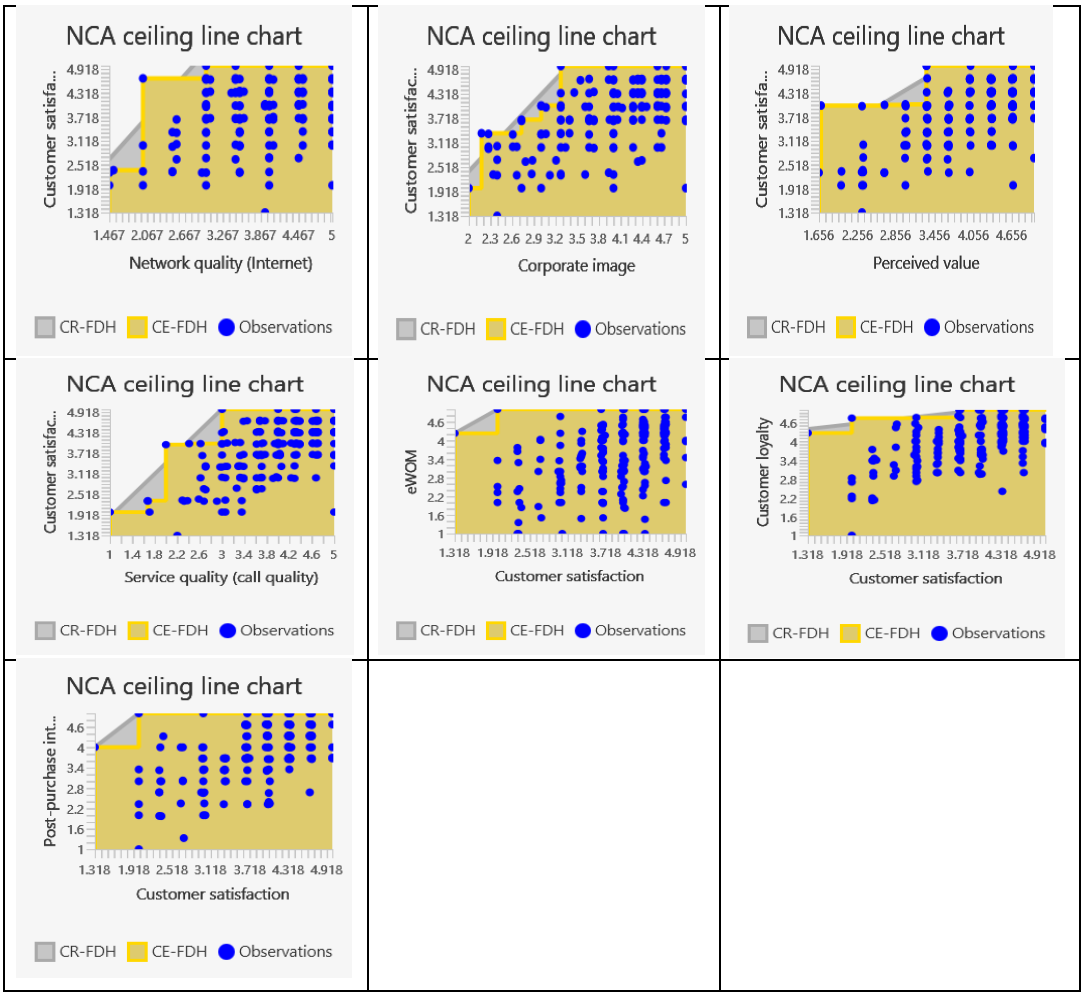

Figure 6. Scatter plots

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Appendix A. Main customer satisfaction antecedents and consequences research in service sector

Author(s) and Nature of the Study	Customer Satisfaction Antecedents	Customer Satisfaction Consequences	Moderator (MO)/ Mediator (ME)	Context
(Calvo-Porral and Nieto-Mengotti, 2019) (Quantitative)	Perceived value (+) Service quality (+) Corporate image (+)	No	Consumer involvement with ICTs (Mo)	Mobile services
(Abdullah et al., 2022) (Quantitative)	Service quality (+) Service attributes (+) Value-added services (+) Price (+)	No	No	Telecommunica-tion service
(Goyal and Kar, 2020) (Qualitative)	Reliability (+) Network Quality (+) Call Quality (+) Information Security (+) Service Interaction Quality (+) Customer Support (+) Information Risk (-)	No	No	Telecommunica-tion service
(Lee et al., 2015) (Quantitative)	Usability (+)	Customer loyalty Trust	No	Mobile phone Service
(Alrwashdeh et al., 2020) (Quantitative)	Service quality (+) Perceived value Dimensions: - Value-for-money (+) - Emotional value (+) - Social value (+)	eWOM	No	Telecommunica tion service
(Shen et al., 2022) (Quantitative)	Service adaptive behavior (SAB) (+)	No	Brand familiarity (MO) Personal familiarity (MO)	Services
(Twum et al., 2022) (Quantitative)	Service quality: (+) Availability of services Facilities (+) Security influence (+)	Continuance usage of mobile money services	No	Mobile money service
(Koay et al., 2022) (Quantitative)	Reliability (+) Maintenance of meal quality and hygiene (MMQH) (+) Assurance (+) Security (+) System operation (+) Traceability (+)	Customer loyalty	No	Online food delivery service
(Bolton and Lemon, 1999) (Quantitative)	Payment equity (+) Normative expectations (+/-)	Customers' future usage	No	Services industry
(Bamfo et al., 2018) (Quantitative)	Service quality (+) Rebranding (+)	Customer loyalty	Rebranding (MO)	Banking service
(Thaichon et al., 2016) (Quantitative)	Network quality (+) Customer service and technical service (+)	Customer commitment Behavioral loyalty Attitudinal loyalty	Age (MO)	Internet service

(Uddin and Akhter, 2012) (Quantitative)	Service quality (+) Price (+) Perceived value (+)	No	No	Mobile phone service
(Sanchez-Franco, 2009) (Quantitative)	Trust Ego Involvement Purchase Involvement	Commitment	Ego Involvement (MO) Purchase Involvement (MO)	E-Banking
(Abbasi et al., 2024) (Quantitative)	Perceived quality (+)	Customer loyalty	No	Social media information on tourism
(Demoulin and Willems, 2019) (Quantitative)	Irritation (-)	No	Involvement (MO) Shopping motives (MO)	Shopping
(Rahimizhian et al., 2020) (Quantitative)	Perceived enjoyment (+) Perceived autonomy (+) Perceived usefulness (+) Perceived ease of use (+)	Behavioral involvement	No	Technology to promote tourism destination
(Albaity and Melhem, 2017) (Quantitative)	Destination image (+) Novelty seeking (+)	Destination loyalty	Customer satisfaction (ME)	Destination tourism
(Anderson and Sullivan, 1993) (Quantitative)	Disconfirmation (+) Disconfirmation (-) Perceived quality (+) Expectation (+)	Repurchase intention	Ease of evaluation quality (MO)	Product and service of firm
(Hult et al., 2019) (Quantitative)	Overall Quality (+) Customer Expectations (+) Perceived Value (+)	Customer Complaint Customer Loyalty	Purchase Context: Online vs. Offline (MO)	Online and Offline Purchases Service
(Jayasankaraprasad and Vijaya Kumar, 2012) (Quantitative)	Service quality (+) Value for money (+) Value for time (+) Store reputation (+) **Situational Factors:** (+) - Store environment (+) - Social surrounding (+) - Positive affect (+)	Store loyalty-(Attitudinal) Store loyalty (Behavioral) Repurchase intention Word of mouth Price insensitivity Complain behavior	No	Food & Grocery Retailing Service
(Mbango, 2019) (Quantitative)	Customer value (+)	Loyalty Communication (WOM) Trust Commitment	No	Vegetable market
(Seo, 2022) (Quantitative)	Gender of service robot (Male/Female) (+) Pleasure (+)	No	Pleasure (ME) Level of anthropomorphism (High/Low) (MO)	Robot service
(Srivastava and Kaul, 2014) (Quantitative)	Convenience (+) Social interaction (+) Customer experience (+)	No	Customer experience	Departmental store shopping

Our Study (Quantitative)	Service quality (Call) (+) Network quality (Internet) (+) Perceived value (+) Corporate image (+)	eWOM Customer Loyalty Post-purchase intention	Customer involvement with ICT (MO)	Mobile telecommunica-tion services

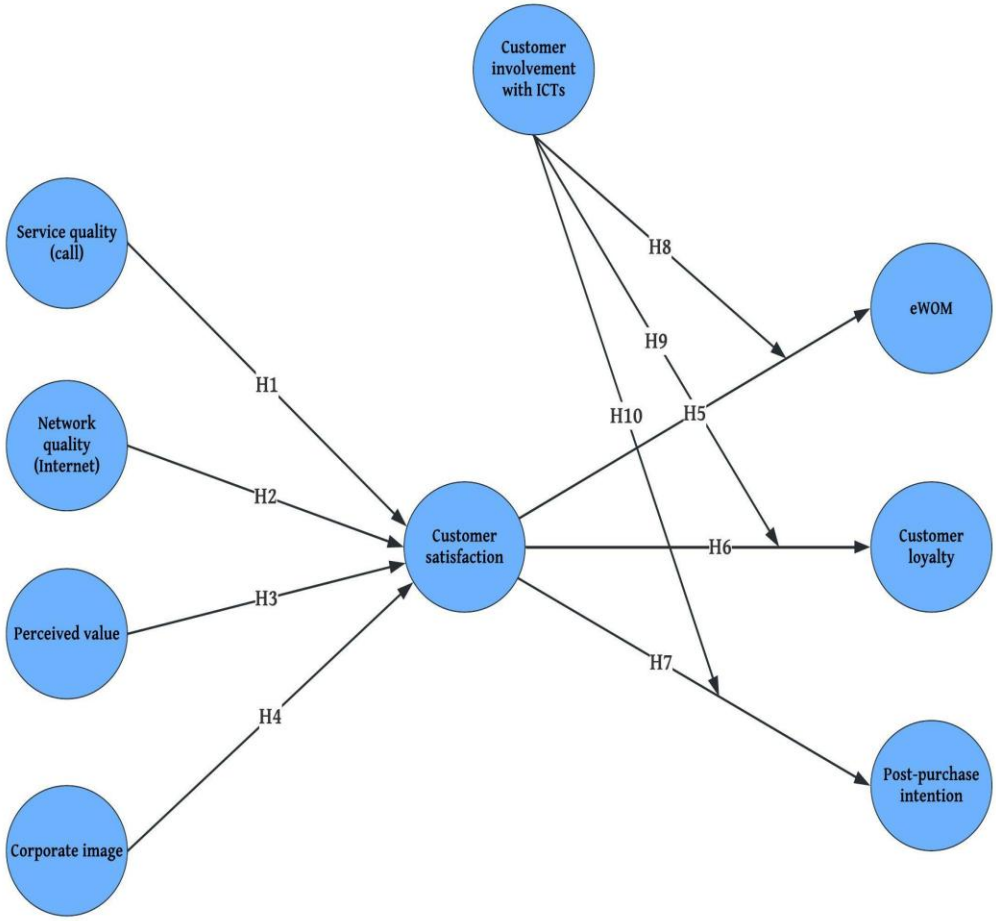

Figure 1. Proposed conceptual model

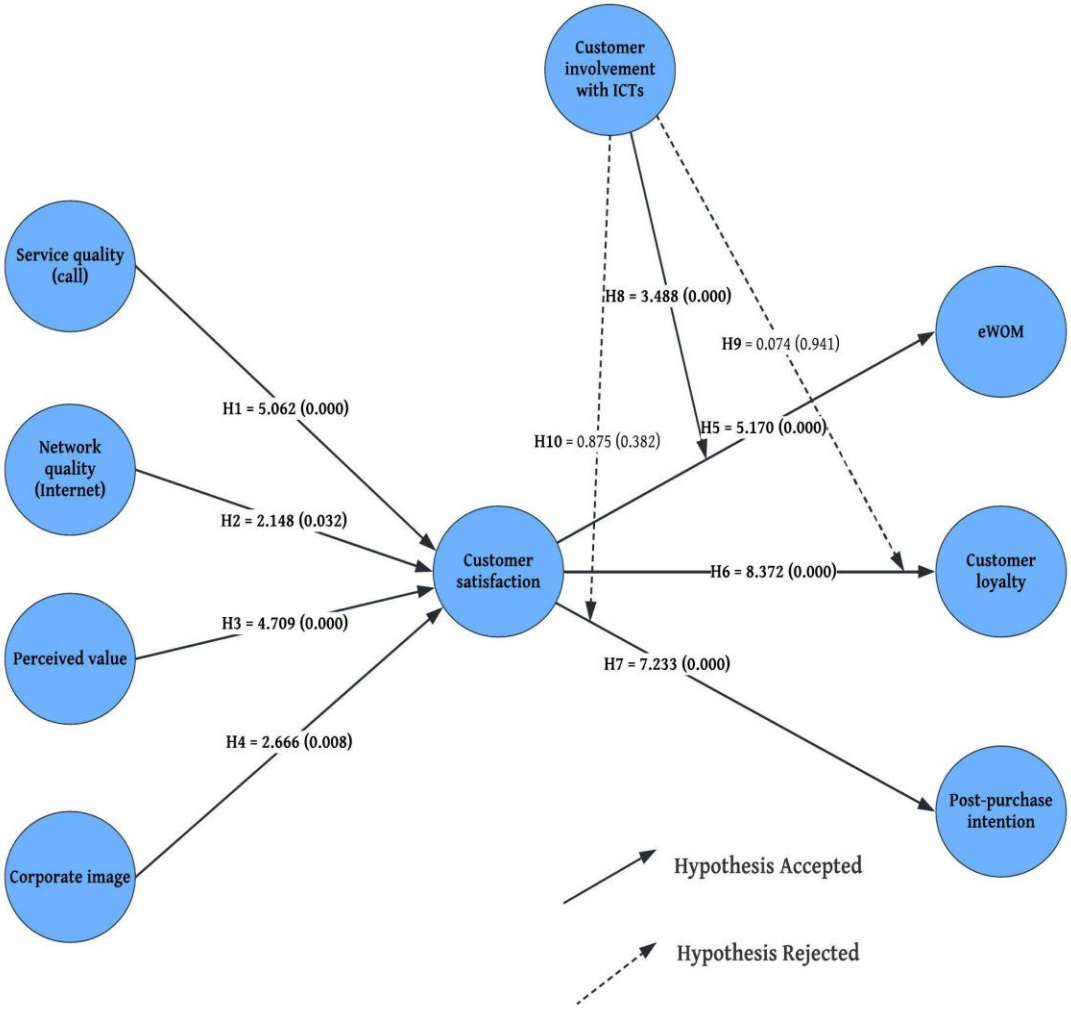

Figure 2. Results of the structural model

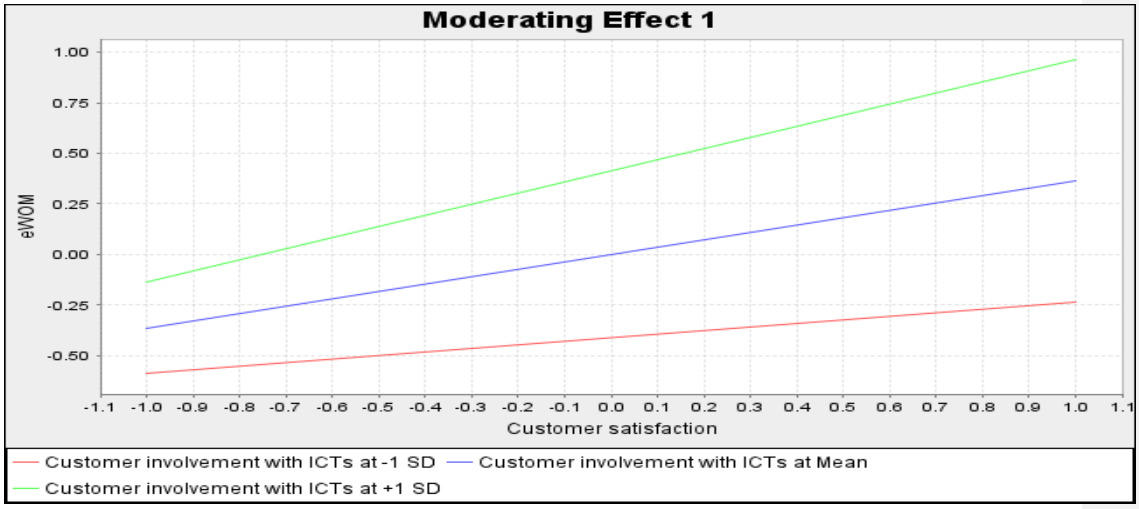

Figure 3. Moderating effect of customer involvement with ICTs between customer satisfaction and eWOM

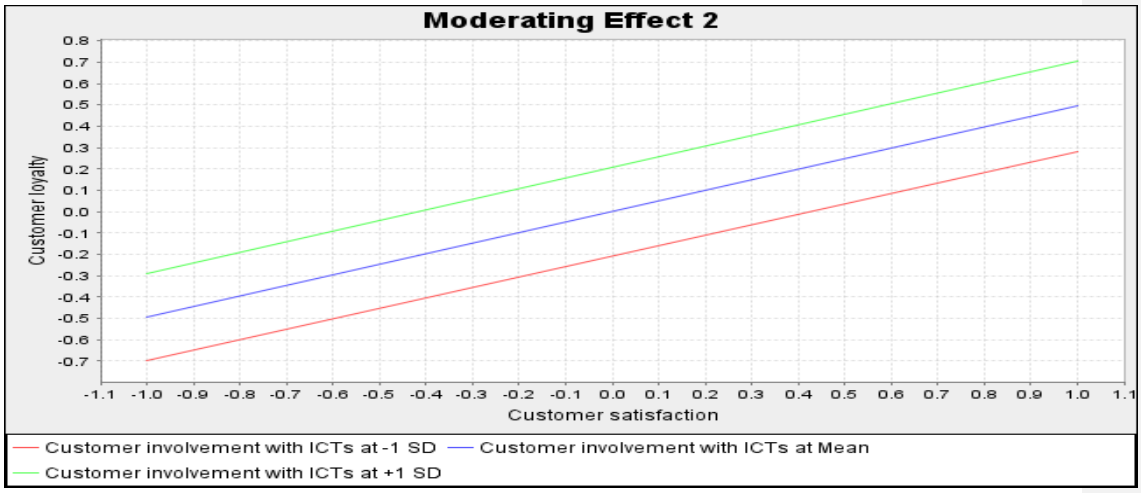

Figure 4. Moderating effect of customer Involvement with ICTs between customer satisfaction and customer loyalty

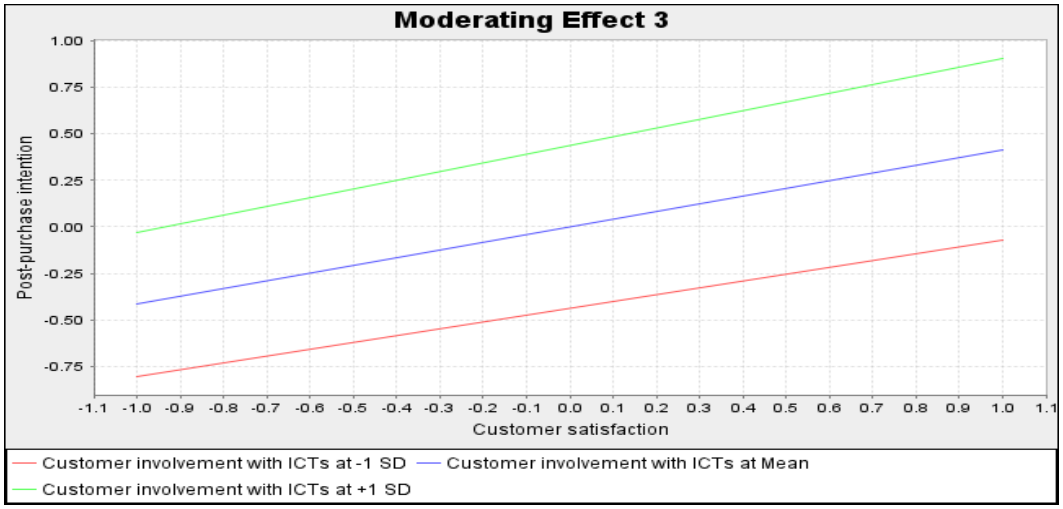

Figure 5. Moderating effect of customer involvement with ICTs between customer satisfaction and post-purchase intentions

Appendix B: The Study Questionnaire

I	***Consumer Loyalty***
1 LOY1	I would encourage you to buy products and services from this network.
2 LOY2	I provide positive feedback about this company to other people.
3 LOY3	I would recommend this network to others.
4 LOY4	Although there are other service providers existing, I would remain forward my subscription with my present mobile company.
II	**Perceived Value**
3 PV1	My cellular phone services company has effectively offered value-added services.
4 PV2	Using the cellular phone services of this company was a good choice.
5 PV3	This cellular phone services company offers me with many advantages.
III	**Service quality (call quality)**
6 SQ1	My cellular phone company provides high-quality services in terms of packages and offers.
7 SQ2	My cellular phone company offers services with adequate value for money.
8 SQ3	My cellular phone company fullfills my needs completely.
IV	**Corporate Image**
9 CI1	This cellular company has a good image with in customers.
10 CI2	I have a well image of my cellular phone services company, rather than another rival companies.
11 CI3	I have a good image and positive conncection with my mobile services proveder.
V	**Customer Satisfaction**
12 SAT1	I am utmost satisfied with the services provided by my cell phone services provider.
13 SAT2	So far, my expectations have been met by my mobile provider.
14 SAT3	This value-added service is better than expected.
VI	**Consumer Involvement with (ICT)**
15 CIV1	The information and communication technology (ICT) app of my network company is valuable to me.
16 CIV2	I have a strong interest in the Information and communication technology (ICT) app of my network company.
17 CIV3	The information and communication technology (ICT) app of my network company really matters to me.
VII	**Post-purchase intention**
18 PI1	In the future, I will use the value-added services provided by this telecom company again.
19 PI2	In the future, I will recommend the value-added services provided by this telecom company to my relatives and friends.
20 PI3	In the future, I will continue to use the value-added services provided by this telecom company.
VIII	**eWOM**
21 eWOM1	I am happy to mention on social media that I am using the certain telecom services.
22 eWOM2	I have written positive comments about this telecom company on social networks.
23 eWOM3	I have posted positive reviews about this telecom company on websites.
24 eWOM4	I posted images and/or videos about my telecom company on social media.
25 eWOM5	I became a follower of the telecom company profile on social media to share the content.
XI	**Network quality (Internet)**
30 NQ1	I have not experienced any Internet disconnection issue from the internet service provider telecommunication company.
31 NQ 2	The Internet uploading and downloading speed meet my expectations.