

Service Quality, Brand Image, Customer Satisfaction, and Customer Loyalty towards Telecommunications Service Providers in Malaysia: A PLS-SEM Approach

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Abstract

The country's economy has benefited greatly from the services sector, which plays a major role in economic development and provides the majority of the gross domestic product (GDP) support for a country. The service industry has paid considerable attention to research on the antecedents of customer loyalty over the years, including the telecommunications sector. Malaysia's telecommunications service providers prioritize customer loyalty as it is crucial for generating repeat business and potential referrals. The study investigates the correlation between service quality, brand image, customer satisfaction, and customer loyalty among Malaysians towards telecommunications service providers. The study utilized a convenience sampling technique and an online questionnaire to gather data from 254 respondents. The data were analysed using partial least squares structural equation modelling (PLS-SEM). The findings revealed that customer loyalty was influenced by service quality, brand image, and customer satisfaction. In addition, service quality successfully predicts customer satisfaction. Also, the mediation results showed that customer satisfaction mediates the relationship between service quality and customer loyalty. This research contributes to the theoretical advancement of the service literature by examining the impact of service quality, brand image, and customer satisfaction on customer loyalty. In practice, this study offers valuable insights to service providers on how to consistently enhance and ensure service quality and brand image while satisfying and retaining customers.

Keywords: Service Quality, Brand Image, Customer Satisfaction, Customer Loyalty, Telecommunications Service Providers, PLS-SEM.

Introduction

Malaysia's economy has benefited greatly from the service sector, which accounts for more than half of the country's gross domestic product (GDP) (Khairi et al., 2023), with the

telecommunications sector being one of the major contributors. The Malaysian telecommunications market is highly competitive, with Telekom Malaysia, Maxis, and CelcomDiGi as the top three telecommunications providers (Twimbit, 2023). Telecommunications services in Malaysia offers both landline and mobile services with varying coverage and pricing levels. Malaysia's fixed broadband subscribers are expected to reach 6.4 million by 2027, while mobile subscribers are projected to reach 53.4 million by the same period (Twimbit, 2023). The industry generated over RM42 billion in 2022 (Statista, 2024) and is expected to reach RM51.4 billion by 2029, growing at a compound annual growth rate (CAGR) of 4.07% (Mordor Intelligence, 2024). As a result, the country's telecommunications industry is experiencing rapid growth and expansion.

The telecommunications industry has experienced significant growth, but intense rivalry and fierce competition between providers and operators, including in the Malaysia market, has also emerged (Ansari et al., 2016; Hajar et al., 2020). The growing number of telecommunications service providers necessitates top-notch service, catering to customer preferences. However, understanding customers in this sector is scarce and inconclusive. Hajar et al (2020), highlighted the importance of telecommunication firms maintaining customer loyalty to navigate challenging economic situations, particularly when it comes to low-cost brand switching. Furthermore, strong customer loyalty positively impacts a firm's financial performance, as it increases future repurchases and boosts potential revenue for the firms, as existing customers are more likely to return (Jahanzeb et al., 2011; Hajar et al., 2020). Therefore, understanding what drives customer satisfaction and loyalty is crucial in the telecommunications industry (Li et al. 2010; Khan et al., 2023).

Prior studies have suggested various factors that predict consumer loyalty, such as service quality, brand image, and customer satisfaction (Khan et al., 2023; Saharo & Diwan, 2017), which this study investigates and focuses on. Customer loyalty is greatly influenced by the quality of services provided and play a crucial role to the telecommunications providers. Customers who view service of superior quality are more inclined to maintain their loyalty towards their service provider (Khan et al., 2023). Additionally, a telecommunications company's brand image has a significant impact on customer loyalty because a strong brand fosters consumer trust and raises their perception of the service's value (Jahanzeb et al. 2011; Khan et al., 2023). Another crucial role in determining customer loyalty is customer satisfaction. Satisfied customers are more likely to remain loyal to their telecommunication provider, recommend it to others, and remain loyal to its services (Safirda & Salim, 2024).

Therefore, the present study aims to investigate the pivotal role of service quality, brand image, and customer satisfaction in shaping customer loyalty within the Malaysian telecommunications industry. This study is significant to both academics and practitioners. For academics, this study makes important and novel contributions at the intersection of service quality, brand image, customer satisfaction, and customer loyalty towards telecommunications service providers in Malaysia. In addition, the results of this study should help telecommunications service providers, the policymakers, and the other interested parties in the telecommunication industry in delivering customer-centric services. By delving into the intricate relationship between service quality, brand image, customer satisfaction, and customer loyalty can help a company gain a competitive advantage by prioritizing exceptional service delivery, establishing a strong brand image, and ensuring high customer

satisfaction. Besides, the advantages are anticipated to generate substantial revenue for the industry and the country's GDP.

Literature Review

Cronin, Brady and Hult's (2000) Model

The service quality-loyalty model developed by Cronin, Brady, and Hult (2000), is used in this study to provide a consumer's perspective on customer loyalty. Cronin et al (2000), asserted that service quality is a prerequisite for customer satisfaction, which in turn leads to customer loyalty. Prior studies have mostly concentrated on the characteristics and assessment of service quality, which is essential for enhancing the service sector. Nonetheless, a number of scholars, such as Cronin et al (2000), suggested that focusing on understanding the relationships between behavioural constructs is the most effective method of explaining consumer behaviour in the service sector. Hence, in a study on customer perspectives in the service sector (Duy, 2019; Tufantoz & Yıldız, 2022), the Cronin et al (2000), model was widely applied; however, the varied outcomes indicate that more research is necessary. Thus, this study predicts that, in addition to service quality, brand image and customer satisfaction will affect customer loyalty in telecommunications service providers.

Customer Loyalty

Loyalty, despite its various definitions, is primarily about long-term relationships and sustainability. Loyalty, as defined by Lovelock and Wirtz (2004), is the sustained dedication to a business, its goods, or services, and the development of a solid rapport with its clientele. Strong brand loyalty from customers promotes regular repurchasing of favoured goods and services (Oliver, 1999). The long-term dedication of customers to a company encourages them to keep buying goods and services and discourages brand switching (De Cosmo et al., 2023). Loyal customers not only contribute positively to the business environment but also generate positive word-of-mouth, business referrals, and serve on advisory committees for firms (Awuku et al., 2023). Customer loyalty is therefore crucial to the telecommunications industry to generate revenue and enhance competitiveness. This study examines the factors that contribute to customer loyalty, including service quality, brand image, and customer satisfaction as proposed by previous studies.

Service Quality

The study of service quality has been a contentious topic due to its intricate definition and measurement, with no consensus on either aspect. Academics consistently attempt to explain it based on their research context. One that is commonly used definition among researchers defines service quality as the customers' assessment of the quality and superiority of the services they receive (Zeithaml & Bitner, 2003). It is the extent to which a service meets customers' needs or expectations (Dehghan, et al., 2012). Based on these definitions, service quality is the customer's evaluation of the quality and superiority of the services they receive, assessing whether the service meets their needs or expectations.

A cornucopia of research in a variety of service sector settings has shown that service quality significantly influences customer satisfaction (Naz et al., 2021; Tran & Le, 2020; Yew & Rahman, 2019). The service industry can raise customer satisfaction by going above and beyond what clients anticipate (Leong et al., 2023). The extensive literature on service marketing also indicates a strong correlation between service quality and customer loyalty.

In addition, studies by Dam and Dam (2021) and Tufantoz and Yıldız (2022) found a significant relationship between service quality and customer loyalty. Customers who perceive service providers as meeting or exceeding their expectations during their consumption process are more likely to be loyal to the provider (Kwong et al., 2023). Based on the above studies, the following hypotheses are proposed:

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

H₂: Service quality has a significant positive impact on customer loyalty.

Brand Image

Brand image refers to consumers' perceptions of a brand, which are stored in memory as a network of associations, which can be attributes, benefits, or attitudes (Keller, 1993). It is meaningful associations and perceptions of a brand within its memory, often influenced by consumers' beliefs and perceptions, about a specific brand (Kotler & Armstrong, 2018). A strong brand image helps consumers differentiate a company's products and services from competitors by incorporating symbolic meanings and their perception and faith in the brand, thereby enhancing their perception (Apéria & Back, 2004). The brand's image is primarily influenced by the quality of its organization and its products and services, and its strength increases when it meets consumer needs and updates its activities faster than competitors (Diallo, 2022). Brand image can be strengthened by fulfilling brand promises (Safeer et al., 2023).

Numerous studies have investigated the correlation between brand image and customer loyalty (Plumeyer et al., 2017). A positive and favourable brand image leading to increased loyalty (Dam & Dam, 2021; Nur et al., 2023; Rahman et al., 2023). Therefore, cultivating a favourable brand image is essential for building a solid brand relationship with customers that results in their loyalty. In light of every study that has been discussed, the following hypothesis is put forth:

H₃: Brand image has a significant positive impact on customer loyalty.

Customer Satisfaction

Customer satisfaction is the degree to which products and services meet or exceed customer expectations (Kotler & Armstrong, 2018). It is the final stage of a process where customers assess the perceived advantages of using a service (Oliver, 2010). The firm's competitive advantage lies in its ability to exceed clients' needs and wants, surpassing its competitors (Minta, 2018). As satisfied customers are more likely to return for future purchases (Mohd Suki, 2017), a company's products or services must be valuable to be able to retain customers (Zameer et al., 2015). Customer satisfaction is a key indicator of a company's success, as it significantly impacts behaviour, repurchase, and word-of-mouth communication (Srivastava & Sharma, 2013). Customer satisfaction leads to increased brand loyalty, which in turn boosts business sales and profitability (Sharma et al., 2020). Customer loyalty is a key factor in business success, as it stems from satisfaction and willingness to pay more for quality products or services, despite being influenced by promotions and competitor pricing (Sani & Febrian 2023).

Previous studies have confirmed the correlation between customer satisfaction and customer loyalty (Dam & Dam, 2021; Tufantoz & Yıldız, 2022; Yew & Rahman, 2019). Prior research suggests that customer satisfaction serves as a mediator between service quality and customer loyalty. Solimun and Fernandes (2018) emphasized that the quality of services provided by service providers significantly boosts customer satisfaction and loyalty. Dam and Dam (2021), Solimun and Fernandes (2018), Tufantoz and Yıldız (2022), and Yew and Rahman (2019) found a significant relationship between service quality and customer loyalty, emphasizing the importance of customer satisfaction as a mediator. Based on the aforementioned studies, the following hypotheses are formulated:

H₄: Customer satisfaction has a significant positive impact on customer loyalty.

H₅: Customer satisfaction mediates the relationship between service quality and customer loyalty.

Research Model

Figure 1 presents the study's conceptual framework and hypotheses, which are derived from a review of the literature.

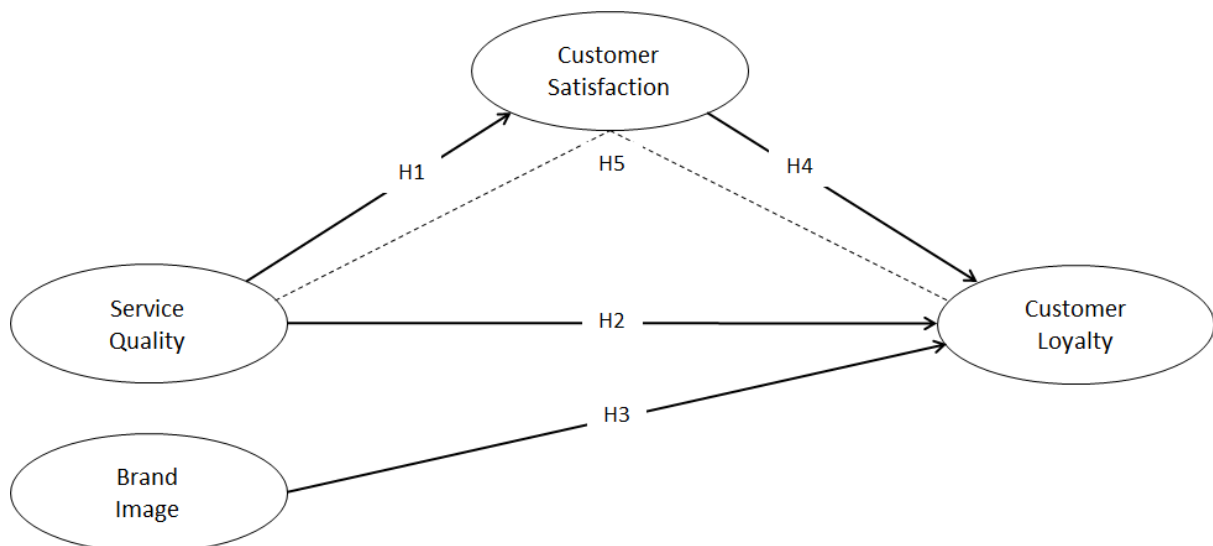


Figure 1. Conceptual Framework.

Methodology

Study Design and Sampling

A cross-sectional study using quantitative methods was adopted in this study. Data collection was conducted through an online questionnaire survey, which was created using Google Forms and shared on various social media platforms, primarily Facebook and WhatsApp, using a uniform resource locator link (URL). The respondents were chosen using a convenience sampling technique, resulting in a sample size of 254 people, which was judged sufficient for the partial least squares-structural equation modelling (PLS-SEM) regression analysis. Hair et al (2012), recommend a minimum sample size of five times the number of measurement items in the proposed model, which is 18 in this study. That being said, 254 gathered responses were deemed adequate for the PLS-SEM analysis.

The questionnaire was divided into two sections. The first section sought to ascertain the demographic characteristics of the respondents, including their age and gender. The second section investigated the factors that shaped their opinions about customer loyalty, service quality, and customer satisfaction. The measurement items were derived from previous established studies, with some revisions. The items were evaluated using a five-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement.

Data Analysis

The data was analysed using PLS-SEM via Smart PLS4.0 to test the hypotheses. The PLS-SEM is a two-stage procedure that involves measurement and structural models (Hair et al., 2014). The measurement model must be evaluated for its reliability, convergent validity, and discriminant validity. The reliability is evaluated using Cronbach's alpha and composite reliability (CR), with values exceeding 0.6 (Pallant, 2020) and 0.7 (Hair et al., 2022) respectively. The average variance extracted (AVE) metric is utilized to confirm convergent validity, with values exceeding 0.5 (Hair et al., 2022). The discriminant validity is assessed using Fornell-Lacker and Hetrotrait-Monotrait (HTMT) criteria. The Fornell-Lacker ratio should have a higher diagonal result than other corresponding values (Fornell & Larcker, 1981), while the HTMT ratio should be less than either 0.85 or 0.90 (Henseler et al., 2015).

The structural model is assessed to determine the significance and relevance of path coefficients, as well as its explanatory power (R^2) and effect size (f^2) (Hair et al., 2021). The R^2 indicates the model explained significant variance for endogenous variables, while the f^2 measures the change in R^2 value when an exogenous construct is removed. The R^2 score ranges from 0 to 1, with 1 being the most accurate (Hair et al., 2017). With regard to the interpretation of the R^2 and f^2 values, Cohen (1988) specifically states that R^2 values of 0.67, 0.33, and 0.19 indicate substantial, moderate, and weak effects and f^2 values of 0.02, 0.15, and 0.35 signify small, moderate, and large effects on the structural level.

Results

Respondents' Profile

A total of 254 respondents participated in this study. The profile of the respondents is detailed in Table 1. Of the respondents, more than half (57.5%) were females and 42.5% were males. The study categorizes respondents into four age groups: 17 and below, 18-26, 27-42, and 43 and above, with the majority of respondents (73.6%) falling in the 18-26 age range. 72.4% of the respondents were single and 65.7% were either pursuing or have completed a bachelor's degree.

The respondents were also asked about their telecommunications data plan type, current telecommunications providers, and the duration of their subscription. Pre-paid customers make up the majority of the respondents (64.6%). A significant proportion of the respondents were CelcomDigi (37.4%) users followed by U Mobile (24.8%) and Maxis (23.6%) users. The majority of respondents (40.6%) have been subscribers for three to five years.

Table 1

Respondents' Profile

Description	Frequency (N)	Percentage (%)
Gender		
Male	108	42.5
Female	146	57.5
Age		
17 and below	6	2.4
18 – 26	187	73.6
27 – 42	45	17.7
43 and above	16	6.3
Marital Status		
Single	184	72.4
Married	70	27.6
Educational Level		
Diploma	63	24.8
Bachelor	167	65.7
Master/PhD	13	5.1
Other	11	4.3
Current Data Plan		
Post-paid	90	35.4
Pre-paid	164	64.6
Current Telecommunication Provider		
CelcomDigi	95	37.4
U Mobile	63	24.8
Maxis	60	23.6
Tune Talk	21	8.3
XOX	9	3.5
Other	6	2.4
Number of years subscribe to current telecommunication provider		
Less than 3 years	58	22.8
3 - 5 years	103	40.6
6 - 10 years	80	31.5
More than 10 years	13	5.1

Measurement Model Assessment

The measurement model was evaluated for reliability and validity, starting with assessing the indicator's reliability by examining the outer loading of items. Hair et al. (2014) suggest that outer loading greater than 0.60 is recommended, however, Hair et al. (2021) also suggest eliminating the lower loading indicator one at a time if the CR and AVE values are below the recommended threshold. Hence, the study eliminated SQ4, SQ5, and BI4 to enhance the model's internal consistency and convergence validity, despite their outer loadings exceeding 0.60. Table 1 provides a comprehensive analysis of the constructs' validity and reliability, revealing that all values meet the recommended thresholds.

Table 2

Constructs' Validity and Reliability Results

Construct & Item	Outer Loading	Cronbach's Alpha	CR	AVE
Service Quality		0.655	0.814	0.593
SQ1	0.837			
SQ2	0.733			
SQ3	0.736			
Brand Image		0.706	0.819	0.531
B11	0.754			
B12	0.736			
B13	0.733			
B15	0.690			
Customer Satisfaction		0.749	0.842	0.571
CS1	0.772			
CS2	0.798			
CS3	0.756			
CS4	0.693			
Customer Loyalty		0.764	0.850	0.586
CL1	0.808			
CL2	0.751			
CL3	0.751			
CL4	0.749			

Next is to analyse the discriminant validity for the four constructs. The study evaluated discriminant validity using the Fornell-Larcker and HTMT criteria. Table 3 confirms the standard of discriminant validity proposed by Fornell and Larcker (1981) and Henseler et al. (2015), as both meet the recommended threshold values.

Table 3

Discriminant Validity Results

Construct	SQ	BI	CS	CL
Fornell-Larcker Criterion				
SQ	0.770			
BI	0.583	0.729		
CS	0.630	0.611	0.756	
CL	0.555	0.589	0.665	0.765
Note: Values on the diagonal (bold) represent the square root of the AVE while the off diagonals are correlations				
HTMT Criterion				
SQ				
BI	0.857			
CS	0.895	0.840		
CL	0.779	0.790	0.880	

Structural Model Assessment

After evaluating the measurement model and verifying its accuracy, the structural model was assessed using the bootstrapping procedure, which tested hypotheses using 5000 sampling iterations, a significance level of 0.05, and a confidence interval approach for an accelerated and bias-corrected analysis (Hair et al., 2022). Accordingly, Table 4 and Figure 2 display all of the values of the tests. As shown in Table 4, all of the hypotheses that were put forth were confirmed. First, service quality and customer satisfaction are statistically significant ($\beta = 0.630$, $t = 14.727$, $p = 0.000$), supporting H1. Second, service quality affects customer loyalty towards telecommunications service providers ($\beta = 0.144$, $t = 1.994$, $p = 0.046$), which supports H2. Third, brand image predicts customer loyalty ($\beta = 0.246$, $t = 3.239$, $p = 0.001$), confirming H3. Forth, the study shows a strong correlation between customer satisfaction and customer loyalty ($\beta = 0.425$, $t = 5.003$, $p = 0.000$), validating H4. Finally, customer satisfaction fully mediates the relationship between service quality and customer loyalty ($\beta = 0.268$, $t = 5.268$, $p = 0.000$), accepting H5.

Table 4 also shows the f^2 values of customer satisfaction on loyalty (0.188), service quality on customer satisfaction (0.657), brand image on customer loyalty (0.069), and service quality on customer loyalty (0.023). The results indicate a small and large effect size of a model as according to Cohen (1988), demonstrating that all the relationships have a small and large effect in determining the R^2 for customer satisfaction and customer loyalty.

Table 4

Summary of Hypotheses Test Results

Hypothesis and Path		Std. Beta	Std. Error	t-value	p-value	f^2	Decision
H1	SQ \rightarrow CS	0.630	0.043	14.727	0.000	0.657	Supported
H2	SQ \rightarrow CL	0.144	0.072	1.994	0.046	0.023	Supported
H3	BI \rightarrow CL	0.246	0.076	3.239	0.001	0.069	Supported
H4	CS \rightarrow CL	0.425	0.085	5.003	0.000	0.188	Supported
H5	SQ \rightarrow CS \rightarrow CL	0.268	0.051	5.268	0.000		Supported

The R^2 result is shown in Figure 2. The study found that service quality accounts for 39.6% of customer satisfaction variance, while 50.7% of customer loyalty variance can be attributed to both service quality and customer satisfaction, indicating moderate explanatory power in these areas. Given that the R^2 threshold is greater than 0.1, the R^2 values of 0.396 and 0.507 are considered acceptable (Falk & Miller, 1992).

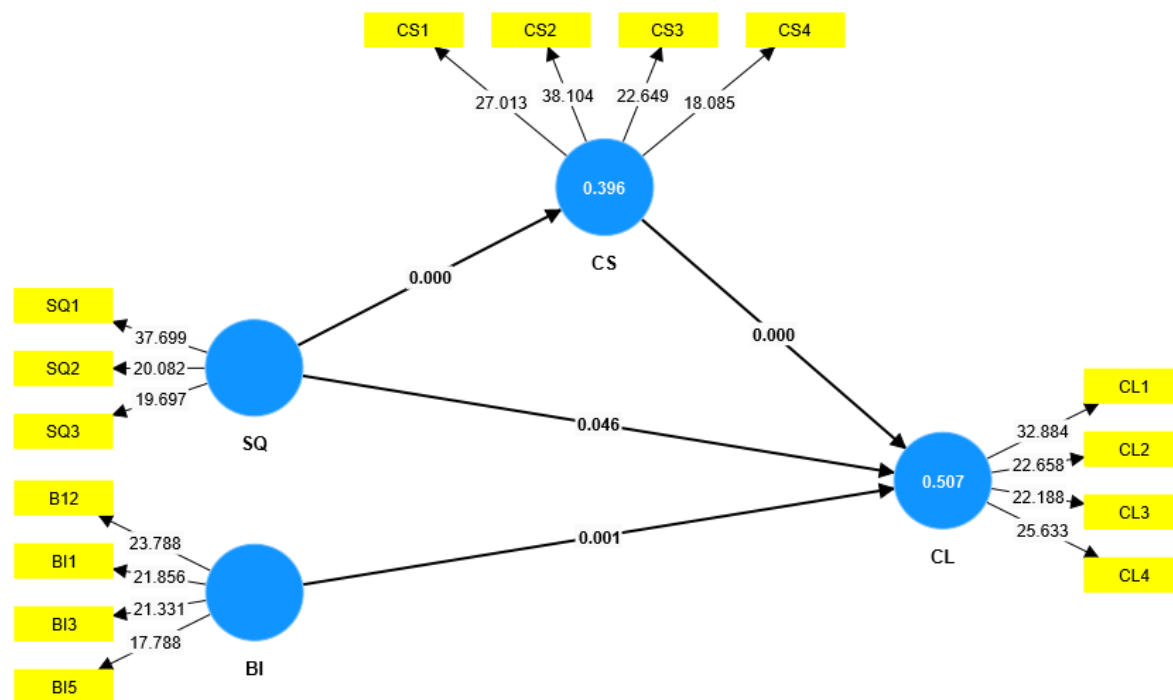


Figure 2. Structural Model

Discussion

This study aims to investigate the triangular relationship between service quality, customer satisfaction, and customer loyalty towards telecommunications service providers among Malaysians, with the role of customer satisfaction serving as a mediating factor.

First, the influence of service quality on customer satisfaction among telecommunication service providers in Malaysia was investigated. The study showed that service quality significantly enhances customer satisfaction, aligning with previous research (Naz et al., 2021; Tran & Le, 2020; Yew & Rahman, 2019) indicating the crucial role of service quality in customer satisfaction. Customer satisfaction in telecommunications service is significantly influenced by excellent service, including courtesy, willingness to help, and problem-solving abilities, which exceeds expectations.

Second, the study explored the influence of service quality on customer loyalty. The study discovered that the quality of service significantly influences customer loyalty towards telecommunications service providers. The study supports previous research (Dam & Dam, 2021; Kwong et al., 2023; Tufantoz & Yıldız, 2022), indicating that customer loyalty to service providers is influenced by the quality of service they receive. It is therefore imperative for telecommunications service providers to continuously offer high-quality products, emphasize their features and benefits, and uphold a high standard of customer responsiveness.

Third, brand image effects on customer loyalty was studied. The findings demonstrated that customer loyalty is influenced by brand image, supporting earlier studies (Dam & Dam, 2021; Nur et al., 2023; Rahman et al., 2023) that found brand image increases consumer loyalty. A positive brand image is vital for customer loyalty and strong relationships in the telecommunications industry, requiring service providers to consistently fulfil promises, demonstrate reliability, and create an emotional connection with consumers.

Forth, the impact of customer satisfaction on customer loyalty was analysed in the study. The results showed that customer satisfaction predicts customer loyalty, which validates previous research (Dam & Dam, 2021; Tufantoz & Yıldız, 2022; Yew & Rahman, 2019) that found customer satisfaction boosts customer loyalty. A customer's loyalty is primarily maintained when a company offers an excellent, high-quality product that meets their satisfaction.

Lastly, the mediation effect of customer satisfaction on the relationship between service quality and customer loyalty was examined. The study revealed a significant positive mediation effect between customer satisfaction and service quality in Malaysians. The study supports previous research by Dam and Dam (2021), Tufantoz and Yıldız (2022), and Yew and Rahman (2019) suggesting that customer satisfaction mediates the relationship between service quality and customer loyalty. The quality of service provided by telecommunications providers significantly impacts customer satisfaction, leading to increased loyalty. Thus, satisfaction with service quality significantly reduces the likelihood of customers switching to another brand or competitor.

Conclusion

The study aims to explore the factors that influence customer loyalty within Malaysia's telecommunications sector. Specifically, this study examines the relationship between service quality, brand image, customer satisfaction, and customer loyalty among Malaysian consumers towards telecommunications service providers. All five hypotheses formulated were supported and were aligned with previous studies on service quality, brand image, customer satisfaction, and customer loyalty. Quality service provide by the telecommunications providers, together with positive brand image significantly impact customers' satisfaction ultimately leads to increased loyalty among the customers.

Implications

Theoretical Implication

In theory, this study contributes to the current body of knowledge on customer loyalty in the telecommunications industry, specifically in the context of Malaysia as a developing country. This study synthesizes customer loyalty literature to provide empirical knowledge on the predictors of customer loyalty in the service sector. Customer loyalty is greatly increased by service quality, brand image, and customer satisfaction, according to empirical evidence of this study. This is an important finding that policymakers, researchers, and practitioners should investigate further in a different service context.

Practical Implication

From a practical standpoint, the findings can provide practical guidance for telecommunications businesses in Malaysia to formulate effective strategies aimed at bolstering customer loyalty, which is a critical factor for their continuous profitability and continued business growth. From the findings, it came to fore that service quality, brand image, and customer satisfaction can improve customer loyalty when perceived as impactful by customers. This means that telecommunications companies continually enhance quality service provided to increase customer satisfaction by going beyond what customers anticipated in terms of courtesy, assistance offered, and problem-solving abilities. Also, telecommunications providers should focus on improving customer satisfaction to boost

loyalty. In addition to that, a positive brand image is crucial for customer loyalty, and focusing on reliability and consistent service can foster strong relationships and emotional connections with consumers.

Limitations and Future Directions

However, it should be noted that the findings of this study are limited to the factors gathered from the consumers' perspectives. For future research, factors gathered from the telecommunications providers should be identified. Possible factors to be included are tax incentives given to the telecommunications industry and Corporate Social Responsibility (CSR) undertaken. Additionally, while the current study only uses a survey questionnaire to collect data, a future study could use a mixed methods approach that combines qualitative and quantitative methods. Interview sessions along with questionnaire surveys with the industry players can be conducted to provide a more in-depth understanding on the telecommunications industry in Malaysia.

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