



Exploring Multi-Dimensional Metrics for Assessing Customer Satisfaction in the Pakistani Cellular Industry

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ABSTRACT

In Pakistan's intensely competitive mobile market, cellular service providers' profitability and long-term viability are largely dependent on customer satisfaction. As a result, this study looks into the various factors that influence customer satisfaction with Pakistan's cellular service providers, with a particular emphasis on factors like brand image, network coverage and quality, price fairness, sales promotion, and service quality. For this study, data from 500 potential customers of Pakistan's four mobile phone providers—Jazz, Telenor, Zong, and U-Fone—was acquired using a stratified sampling technique. Further data analysis included a two-stage structural modeling methodology. The structural model was used to evaluate the relationship between the underlying variables, while the measurement model was utilized to evaluate the validity and reliability. According to the survey, customer satisfaction is significantly and favorably impacted by brand image, network coverage and quality, sales promotion, and service quality. Pricing, on the other hand, had a negative and considerable impact on customer satisfaction among Pakistani cellular providers. This study examines how multi-dimensional metrics might be used to measure customer satisfaction in the Pakistani cellular industry.

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1. Introduction

The cellular market in Pakistan has expanded dramatically over the past several years, thanks to an increase in customers and an expansion of services. As competition increases, cellular service providers must work to retain their current clientele in addition to acquiring new ones. In order to accomplish this goal, it is crucial to focus on customer satisfaction because satisfied customers are more likely to remain loyal to a business and refer others to its services (Khan et al., 2023). Employing multi-dimensional metrics that go beyond conventional measurements and probe into numerous facets of the customer experience is essential for conducting a thorough analysis of customer satisfaction (Ishaq et al., 2023). Similar to many other nations, Pakistani cellular providers face a number of difficulties when trying to provide for their customers. Here are some typical issues that Pakistani cellular businesses and their clients encounter: Customers in Pakistan, for instance, frequently complain about irregular network coverage and poor call quality (Iqbal, 2016). Particularly in rural and remote areas, cellular operators find it challenging to deliver seamless service. In addition to erroneous invoicing, unforeseen fees, and issues with comprehending mobile bills, customers frequently voice these complaints (Kouser et al., 2012). The fierce competition in Pakistan's mobile industry might also result in price fairness wars, which could harm the profitability and long-term viability of cellular providers. Customers might enjoy cheaper costs, but they might also worry about the level of service they will receive (Javed & Khan, 2023). To ensure that customers in Pakistan have access to dependable, cost-effective, and high-quality mobile services, it is necessary for cellular operators, regulatory agencies, and other stakeholders to work together to address these issues.

In the ever-evolving landscape of Pakistan's cellular industry, customer satisfaction remains a key driver of success and profitability for cellular service providers. Therefore, in Pakistan, several studies have been conducted on this topic. Ishaq et al. (2023), for example, highlighted the influence of brand reputation on customer loyalty and noted that higher levels of customer satisfaction can result from a positive opinion of a cellular provider's brand. Similarly, Khan et al. (2023) showed that lower levels of customer satisfaction were consistently associated with frequent call drops, weak signal strength, and slow data speeds. Additionally, Maghsoudi et al. (2023) hypothesized that increases in network quality may boost client loyalty. Additionally, Iqbal (2016) asserts that fair pricing and open billing procedures are essential for raising consumer satisfaction. Furthermore, Ekom Etim et al. (2023) noted that straightforward billing procedures and competitive pricing are crucial in improving customer satisfaction. According to Javed and Khan (2023), customers are more likely to be satisfied when they feel that they are getting a good deal and that pricing is reasonable and consistent.

However, in the context of cellular firms operating in Pakistan, the study aims to examine the effects of service quality, brand image, price fairness, network coverage and quality, and service quality on customer satisfaction. The study is to investigate any interactions between these variables and determine the relative importance of each in influencing customer satisfaction levels through a thorough analysis. In order to provide cellular companies in Pakistan with useful information to improve their service offerings and customer experiences, the research aims to clarify the complex relationships between service quality, brand image, pricing strategies, network performance, and overall customer satisfaction. In addition, the study will attempt to ensure the validity and trustworthiness of its conclusions while acknowledging any inherent biases and limitations in the research process. This study also highlights the significance of pricing, sales promotions, network quality and coverage, brand image, and service quality in influencing customer satisfaction in Pakistan's cellular industry.

In Pakistan's intensely competitive mobile market, cellular service providers' profitability and long-term viability are largely dependent on customer satisfaction. This study examines the various factors that influence customer satisfaction with Pakistan's mobile service providers, with a particular emphasis on factors such as brand image, network coverage and quality, price fairness, sales promotion, and service quality, which have been hardly investigated in a single study in the context Pakistani cellular companies. In addition, this study considers the customers of all cellular companies currently providing services in Pakistan. This study attempts to offer insights that can help cellular carriers improve customer satisfaction and loyalty by examining how these variables interact. In order to fill the research gap, this study makes three attempts: The first section of this study examines the relationship between brand image (BIMG) and customer satisfaction (CSAT). Second, this study

considers how network coverage and quality (NCAQ) affect customer satisfaction (CSAT). Third, in the case of Pakistani cellular operators, this study considers the direct relationship between price fairness (PRIC) and customer satisfaction (CSAT). Fourth, the direct effect of sales promotion (SPRO) on customer satisfaction (CSAT) is taken into account in this study. Finally, this study considers how service quality (SQUL) affects customer satisfaction (CSAT).

2. LITERATURE REVIEW

2.1. Theoretical Framework

In this study, the interaction between cellular firms and their customers in the context of customer satisfaction is examined using the Expectancy-Disconfirmation theory (EDT). Customer satisfaction is a complex phenomenon influenced by a multitude of factors, and several theories from the fields of marketing, psychology, and economics can help us understand this relationship. According to this hypothesis, a comparison between consumers' expectations and the perceived performance or service quality affects customer satisfaction. Customers establish expectations about network quality, pricing, and customer service in the context of cellular firms. Customer satisfaction is likely to rise if the actual experience lives up to or surpasses these expectations. This idea can be used by cellular businesses to efficiently manage client expectations (Rathjens et al., 2023). However, a sophisticated grasp of consumer expectations, perceived performance, and the ensuing satisfaction levels is necessary when applying Expectancy-Disconfirmation Theory (EDT) to assess customer satisfaction among Pakistani mobile phone users. Finally, expectancy-disconfirmation theory application offers a solid foundation for comprehending and assessing consumer happiness in Pakistani cellular industry. Cellular companies can enhance customer satisfaction and fortify their position in the competitive market by proactively managing client expectations, recognizing positive disconfirmations, and adapting their business strategies accordingly. Maintaining long-term client loyalty and positive disconfirmation requires constant change depending on feedback from the market.

2.2. Brand Image (BIMG) and Customer Satisfaction (CSAT)

A strong and positive brand image significantly boosts customer satisfaction, according to a brand image study (Erkmen & Hancer, 2019). Additionally, similar to any other market, the impact of brand image on customers of cellular companies in Pakistan is enormous and can have a profound impact on customer behavior and loyalty (Kittur & Chatterjee, 2021). Additionally, much like in many other nations, Pakistan's cellular carrier customers are significantly and variously impacted by brand image (Singh et al., 2021). Accordingly, a positive brand reputation helps draw in new clients (Zehra & Arshad, 2019). On the other hand, clients of cellular service providers with a positive brand reputation might be more tolerant of somewhat higher prices (Chakraborty, 2019). Furthermore, clients who like working with a cellular provider with a high brand reputation are more likely to prefer them to others (Le et al., 2021). In the same line, customers are more likely to be pleased with their choice if a brand is recognized for having innovative products, dependable networks, and strong customer service (Tam et al., 2022). As a result, cellular companies can weather crises and unfavorable occurrences easier when they have a strong brand (Salehzadeh et al., 2018). As a result, businesses with strong brand identities find it easier to launch and promote new goods and services (Kashyap et al., 2023). Therefore, a cellular company can gain a competitive edge in a congested market by having a strong brand image (Javed & Khan, 2023). Ultimately, a strong brand reputation can boost consumer satisfaction, loyalty, and trust while also giving an organization a competitive advantage (Ekom Etim et al., 2023). In light of the theoretical framework and a review of the relevant literature, the following research hypothesis is presented:

H₁: Brand image significantly affects customer satisfaction in the context of Pakistani cellular companies.

2.3. Network Coverage & Quality (NCAQ) and Customer Satisfaction (CSAT)

In Pakistan, network coverage and quality are paramount to customer satisfaction. Customer perception is significantly impacted by poor coverage and frequent call dropouts (Chakraborty, 2019). As in any other nation, network coverage and quality have a significant impact on how customers of

cellular companies behave in Pakistan (Chakraborty & Sengupta, 2013). Regarding Customers in Pakistan, a diversified nation with urban and rural areas, have a range of demands and expectations (Adam et al., 2018). Customer satisfaction is directly impacted by the quality of network coverage (Shafei & Tabaa, 2016). Customers demand continuous and clear calls in Pakistan, where reliable communication is crucial for both daily life and business (Grechyn & McShane, 2021). As was already said, a robust network guarantees that users can access a variety of services, such as social media, mobile banking, and e-commerce (Kashyap et al., 2023). Dropped calls or sluggish data connections can also impair productivity and disrupt communication in the workplace (Kim, 2019). Furthermore, given that a sizeable component of the population lives in rural regions, this is particularly crucial (Delgado-Hernández & Palacios-Navarro, 2023). As previously stated, customers can maximize the use of data-intensive services such video streaming, online gaming, and video conferencing when there is high-quality network coverage (Coletta et al., 2021). Conversely, cellular providers with the best network quality and coverage frequently leverage these aspects as a competitive advantage (Leong et al., 2022). Customers are therefore more likely to switch to a rival who provides superior coverage and service quality if they face recurrent network troubles (Grechyn & McShane, 2021). The following research hypothesis is offered in light of the theoretical framework and a review of the literature:

H₂: Network coverage and quality significantly affect customer satisfaction in the context of Pakistani cellular companies.

2.4. Price fairness (PRIC) and Customer Satisfaction (CSAT)

In Pakistan, pricing strategies indicate that price fairness sensitivity is high among Pakistani cellular customers (Shokouhyar et al., 2022). Similar to other countries, Pakistan's consumers are significantly impacted by the cost of cellular services because it directly influences their decision-making, cellular plan selection, and level of satisfaction with their cellular service providers (Leong et al., 2022). Additionally, many citizens of the nation are price fairness -sensitive and seek out affordable cellular plans that fit within their budgets (Illescas-Manzano et al., 2022). Furthermore, more people tend to find cheaper plans and bundles to be more enticing (Alvarez Leon et al., 2021). In line with this, clients evaluate the value they obtain for the price they pay, even though cost is important. They anticipate receiving a favorable return on their investment in terms of network coverage, call quality, and data speeds (Venkatakrishnan et al., 2023). However, clients may switch providers if they discover better affordable options elsewhere, which has a direct impact on the turnover rate (Mursid & Wu, 2022). Conversely, during times of economic instability or inflation, customers can become more price fairness-sensitive (Kumar Singh et al., 2022). When a cellular provider raises rates frequently or tacks on extra costs, it may cause churn among customers. However, providing competitive pricing can increase customer loyalty (Tanrsevdi et al., 2022). In contrast, fierce competition may lead to more aggressive pricing, which is beneficial for customers but may put pressure on providers' margins (Kashyap et al., 2023). In Pakistan's competitive cellular business, it is crucial to strike a balance between pricing and service quality in order to meet the wide range of client needs (Tanrsevdi et al., 2022). In view of the data provided, the following hypothesis is plausible:

H₃: Price fairness significantly affects customer satisfaction in the context of Pakistani cellular companies.

2.5. Sale Promotions (SPRO) and Customer Satisfaction (CSAT)

In the context of Pakistan, Sales promotion activities play a role in customer satisfaction, particularly when they offer tangible benefits and incentives (Teck Weng & Cyril de Run, 2013). Similarly, sales campaigns can significantly affect customers of cellular companies in Pakistan, affecting their actions, decisions, and level of satisfaction (Langga et al., 2021). Additionally, this can entail providing extra data, minutes, or texts for a brief period of time at no additional charge or at a discounted rate (Gorji & Siami, 2020). Moreover, sales promotions can be used to retain current clientele and lower turnover (He et al., 2022). Furthermore, discounts or packaged deals can persuade clients to combine different services from the same vendor (Teixeira et al., 2022). Customers are therefore more inclined to stick with their present cellular carrier rather than switch to a rival if they believe they obtain added value through

promotions (Blom et al., 2021). Promotions, however, are frequent in Pakistan around important events, holidays, and festivals. (Fam and others, 2022). Similar to this, short-term revenue spikes from sales promotions might help cellular carriers reach financial targets or make investments in network expansion (Tzeng et al., 2021). Cellular providers in Pakistan must, however, properly plan and carry out sales promotions (Venkatakrisnan et al., 2023). Contrarily, when promotions expire or customers perceive the offers as deceptive, excessive or poorly structured, it might cause customer attrition (Teixeira et al., 2022). The following hypothesis is plausible in light of the above-mentioned studies:

H₄: Sale promotions significantly affect customer satisfaction in the context of Pakistani cellular companies.

2.6. Service Quality (SQL) and Customer Satisfaction (CSAT)

In Pakistan, service quality, including customer support and issue resolution, emerges as a critical factor. Satisfaction is significantly impacted by quick and effective problem-solving (Rezaei et al., 2016). Furthermore, service quality covers a range of facets of the user experience, such as network dependability, customer assistance, and the general usability of cellular services (Fernandes, 2018). Issues like buffering during video streaming, sluggish webpage loading, and a poor online experience can be caused by slow data speeds or network congestion (Mohammed et al., 2022). Customers in Pakistan, on the other hand, anticipate prompt and helpful assistance when they experience issues with their cellular services (Lin et al., 2023). Accordingly, inadequate customer service might cause annoyance and attrition (Naz et al., 2023). Customer dissatisfaction can be reduced, however, by prompt resolution and proactive communication (Jain et al., 2022). Individuals' perceptions of service quality are further improved when a variety of service plans and customization choices are available, allowing them to select services tailored to their unique needs (Leem & Eum, 2021). As a result, customers who are satisfied with the level of service provided by a cellular provider are more likely to promote the business to others (Elsotouhy et al., 2023). Customers want trustworthy, high-quality services that satisfy both their communication and data needs (Mehdi et al., 2023). Therefore, in this cutthroat market, cellular providers that prioritize network dependability, call quality, customer service, and a seamless user experience are more likely to attract and retain satisfied consumers (Campanella et al., 2022). The following hypothesis is possible in light of the information presented:

H₅: Service quality significantly affects customer satisfaction in the context of Pakistani cellular companies.

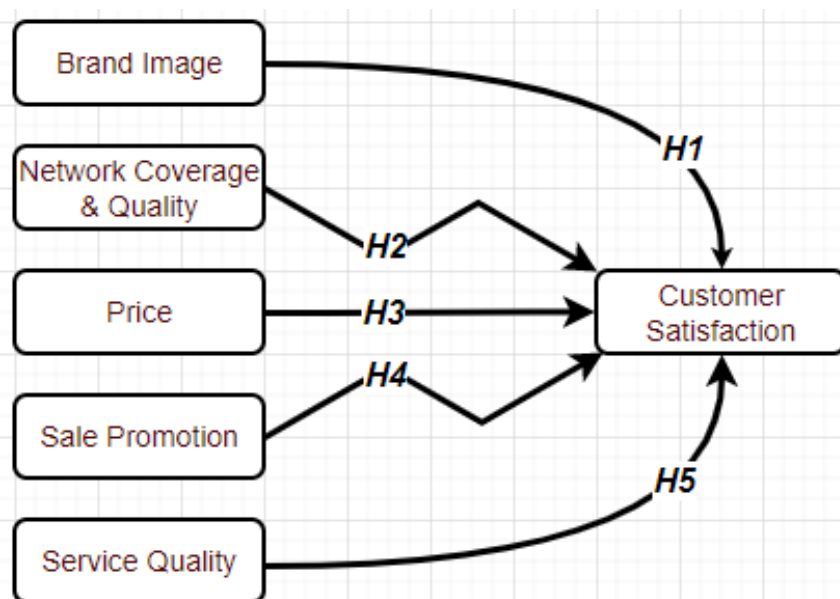


Fig. 1. Theoretical Framework

3. Research Methods

3.1. Study Sample and Data Collection

The core objectives of this study are to measure the impact of five independent variables (Brand image, network coverage & quality, price fairness, sales promotion, and service quality) on one dependent variable (Customer satisfaction). However, to achieve the objectives of this study, we employed a structural questionnaire for data collection from the target population (Customers of cellular companies of Pakistan) by dividing them into four meaningful group based on the cellular companies operating in Pakistan, namely Pakistan Mobile Telecommunication Limited (Jazz), Telenor Pakistan (Telenor), China Mobile Pakistan Limited (Zong), and Pakistan Telecom Communication Limited (U-fone). However, further details pertaining to the demographic and socio-economic characteristics of the target population has been given in Table 1.

Table 1. Demographic & Socio-Economic Characteristics of the Customers of Cellular Companies

Variables	Category	Frequency	Percent	Cumulative Percent
Gender	Male	280	56	56
	Female	180	36	36
	Transgender	40	8	8
	Total	500	100	
Age	18-29	140	28	28
	30-39	110	22	50
	40-49	105	21	71
	50-59	95	19	90
	60-Above	50	10	100
	Total	500	100	
Marital Status	Single	220	44	44
	Married	195	39	83
	Divorced	85	17	100
	Total	500	100	
Name of Company	Jazz	125	25	25
	Telenor	125	25	50
	Zong	125	25	75
	U-Fone	125	25	100
	TOTAL	500	100	
Province (Area)	Punjab	100	20	20
	Sindh	100	20	40
	KPK	100	20	60
	Balochistan	100	20	80
	Islamabad	100	20	100
	TOTAL	500	100	

3.2. Survey Instrument

The dependent variable of the study is customer satisfaction, and the independent factors are brand image, network coverage and quality, pricing, sales promotion, and service quality. In order to measure the underlying six factors (Brand image = 3, network coverage & quality = 3, pricing = 3, sale promotion = 3, service quality = 3, customer happiness = 3) a total of 18 questions were included in the survey instrument. However, Table-IV lists all the components of each construct that were adopted based on earlier investigations.

3.3. Data Analysis Technique

Two-stage structural equation modeling approaches were applied in this work for additional data analysis. This strategy employs two distinct methodologies: the measurement model (outer model) and the structural model (inner model). The measurement model is used to assess the reliability and validity of the questionnaire. On the other hand, structural models are used to analyze the connection between the underlying causes and the productive forces, as well as the proportion of variation in the dependent variable (Customer satisfaction) due to the independent variable (brand image, network coverage & quality, price fairness, sales promotion, and service quality) (Joseph F Hair, Risher, Sarstedt, & Ringle, 2019; Henseler et al., 2014; Joe F Hair et al., 2014). However, Table 2 and Table 3, present the evaluation standards and cutoffs for the structural model (strength of association

between the dependent and independent variables) and the measurement model (reliability and validity), respectively.

Table 2. Assessment Criteria for Measurement Model

Sr. #	Measures	Threshold	Sources
1	Indicator Reliability	The minimum criteria or threshold for factor loading is (>0.6).	Oke et al., 2022; Hair Jr et al., 2021; Hair et al., 2014
2	Internal Consistency Reliability	The threshold value of Cronbach's Alpha is equal to or greater than 0.7, and Composite Reliability is equal to or greater than 0.7.	Burns & Bursn, 2000; Lai, 2021; Kline, 2016; Oke et al., 2022; Hair Jr et al., 2021; Iqbal & Rao, 2022
3	Convergent Validity	The threshold value for Average Variance Extracted (AVE) is equal to or greater than 0.50.	Hair Jr et al., 2021; Shafie et al., 2021; Iqbal & Rao, 2022
4	Discriminant Validity	Discriminant Validity: Threshold values for Fornell-Larcker, Cross-loadings, and Hetrotrait-Monotrait Ratio (HTMT Ratio) are < 1.	Oke et al., 2022; Kumar et al., 2021; Roemer et al., 2021; Joseph F. Hair et al., 2019; Iqbal & Rao, 2022
5	Multicollinearity	Collinearity b/w indicators: No. Multicollinearity if the value of *VIF < 10, Severe Multicollinearity if the value of VIF > 10, and Mild Multicollinearity if the value of VIF < 10 and > 5."	Iqbal & Rao, 2022; Ahmed & Ishtiaq, 2021; Joseph F. Hair, 2019

Table 3. Assessment Criteria for Structural Model

Sr. #	Measures	Threshold	Sources
1	Coefficient of Determination (R^2)	R^2 values are between 0 and 1. R^2 value of 0.75 is considered good, 0.50 considered normal, and 0.25 considered weak.	Joseph F. Hair et al., 2017; Hair et al., 2019; Iqbal & Rao, 2022
2	Path Coefficients (β):	Path Coefficients (β): Size and Significance of Path Coefficients (β), T-values = ≥ 1.96 , and P-values ($p < 0.01$) at (α) = 10% significance level"	Hair et al., 2017; Hair et al., 2019; Iqbal & Rao, 2022

4. RESULTS & DISCUSSIONS

4.1. Test of Reliability

The factors loading of all the items of the constructs listed in Table-V are higher than the minimum value of 0.6, as advised by Oke et al. (2022); Hair Jr et al. (2021), and Hair et al. (2014), demonstrating the indicator reliability of this study. The constructs (brand image, network coverage & quality, price fairness, sales promotion, service quality, and customer satisfaction) listed in Table-IV all had Cronbach's Alpha values that were higher than the minimum threshold value of 0.7, as suggested by Kline (2016); Oke et al. (2022); Hair Jr et al. (2021); Burns and Bursn (2000), and Lai (2021). Additionally, internal consistency reliability was established.

4.2. Test for Validity.

Reliability cannot be helpful unless the validity of the instrument is proven, due to the interaction between reliability and validity (Ahmed & Ishtiaq, 2021; Shafie et al., 2021; Oke et al., 2022; Kumar et al., 2021). Convergent validity was accessible using the average variance extracted (AVE), one of two types of validity retrieved in this study. The HTMT Ratio (Hetrotrait-Monotrait Ratio), used to determine the discriminant validity, is the second. Convergent validity was established in this study because, as recommended by (Hair Jr et al., 2021; Iqbal & Rao, 2022), all of the constructs (brand image, network coverage & quality, price fairness, sales promotion, service quality, and customer satisfaction) listed in Table-IV had AVE values higher than the threshold value of 0.50. This study also used HTMT for robustness and found that it consistently exceeded the Fornell-Larcker criterion in numerous contexts. Table-VI displays the results of the HTMT ratio values. Because the values are less than the cutoff values of 0.85/0.90, the findings demonstrate that the study's goal of discriminant validity was achieved (Roemer et al., 2021; Joseph F. Hair et al., 2019; Oke et al., 2022).

4.3. Test for Multicollinearity

There was no correlation between the supporting variables in this study (brand image, network coverage & quality, price fairness, sales promotion, service quality, and customer satisfaction) because

the variance inflation factor (VIF) values listed in Table-IV are less than the recommended value of 5, as suggested by Joseph F. Hair (2019); and Iqbal and Rao (2022).

Table 4. Reliability and Validity

Item Codes and Descriptions of Items	Factor Loading	VIF	Source
<i>Brand Image (Cronbach's Alpha = 0.793, CR = 0.831, AVE = 0.622)</i>			
BIMG-1: Customers entering our network as a result of brand reputation	0.704	1.271	(Iqbal, 2016;
BIMG-2: Customers join our network because of the connections to celebrities.	0.856	1.626	Singh et al.,
BIMG-3: Customers join as a result of the strong client ties in our network.	0.798	1.408	2021; Tam et al., 2022).
<i>Customer Satisfaction (Cronbach's Alpha = 0.721, CR = 0.843, AVE = 0.644)</i>			
CSAT-1: Retention on the same network due to improved services	0.772	1.446	(Iqbal, 2016;
CSAT-2: The low rates allow for retention within the same network.	0.835	1.62	Cheng, 2020;
CSAT-3: Encouraging other individuals to join this network	0.885	1.764	Leong et al., 2022).
<i>Network Coverage & Quality (Cronbach's Alpha = 0.764, CR = 0.860, AVE = 0.675)</i>			
NCAQ-1: Provision of call quality and network coverage	0.903	1.812	
NCAQ-2: Better frequency service during calls	0.776	1.331	(Iqbal, 2016).
NCAQ-3: minimal stuttering and smooth phone communication	0.869	1.924	
<i>Price Fairness (Cronbach's Alpha = 0.772, CR = 0.867, AVE = 0.687)</i>			
PRIC-1: For clients, the cost of a sim card is reasonable.	0.726	1.366	(Iqbal, 2016;
PRIC-2: For clients, the rate of call & SMS is realistic.	0.887	1.896	He et al., 2022;
PRIC-3: For Clients, the rate of internet and other services is affordable	0.864	1.817	Fam et al., 2022).
<i>Sales Promotion (Cronbach's Alpha = 0.707, CR = 0.837, AVE = 0.623)</i>			
SPRO-1: Utilizing a promotion agent to resolve customer issues	0.72	1.314	(Iqbal, 2016;
SPRO-2: Free Services like balance, prizes, discounts, etc.	0.74	1.395	Naz et al.,
SPRO-3: Information about various bundles is provided via advertising	0.78	1.472	2023; Mehdi et al., 2023).
<i>Service Quality (Cronbach's Alpha = 0.782, CR = 0.870, AVE = 0.693)</i>			
SQUL-1: Immediately managing complaints by front-line staff.	0.763	1.439	(Iqbal, 2016;
SQUL-2: Customer satisfaction with the network's quality	0.752	1.844	Leong et al.,
SQUL-3: Fulfilment of all promises made by the company.	0.746	1.79	2022).

Table 5. HTMT Ratio

Constructs	(1)	(2)	(3)	(4)	(5)	(6)
(1) Brand Image						
(2) Customer Satisfaction	0.790					
(3) Network Coverage & Quality	0.860	0.741				
(4) Price fairness	0.790	0.623	0.754			
(5) Sales Promotion	0.748	0.745	0.695	0.707		
(6) Service Quality	0.803	0.894	0.772	0.732	0.802	

4.4. Test for Predictive Power of the Model.

Table-VI indicates the overall predictive power of the underpinning model of the study. According to the findings, 92% variance in the customer satisfaction (CSAT) is attributed to the independent variables, including brand image (BIMG), network coverage & quality (NCAQ), price fairness (PRIC), sales promotion (SPRO), and service quality (SQUL) accordingly (Joseph F. Hair et al., 2017; Hair et al., 2019; Iqbal & Rao, 2022).

Table 6. Coefficient of Determination (R^2)

Constructs: -	R Square	R Square Adjusted
Customer Satisfaction	0.922	0.920

4.5. Test for Hypothesis:

The structural equation modeling (Inner-Model) technique was applied to the hypotheses of the study, and final results in this regard were presented in Table-VIII. According to the outcomes presented in Table-VII, the next step is to utilize PLS-SEM to explore the link between numerous constructs or the study's hypothesis using the structural model (inner model) after establishing

the instrument's reliability and validity using the measurement model (outer model) (Joseph F Hair et al., 2019). The bootstrapping procedure was then used to test a significant level of different path coefficients (β) using the p-value and t-value (Joseph F Hair et al., 2017). T-Statistics (t-values) and p-values were developed due to the bootstrapping technique, allowing researchers to assess the significance level of path coefficient (β). The standardized approach of bootstrapping was used in this study with a subsample size of 5000 to assess the significance level of path coefficient (β) where the threshold for t-values was set to 1.96, and the threshold for p-values was set to ($p < 0.01$) at a significance level of (α) = 10%. (Henseler et al., 2015). Table 7 present the hypotheses testing results based on the significance of the path coefficients (β -Values), t-value, and P-values.

The first hypothesis (H_1), which states that "brand image significantly affects customer satisfaction in the context of Pakistani cellular companies," is accepted ($\beta = 0.3678$; $t = 8.840$; $p < 0.000$). Therefore, the findings related to this hypothesis indicate a positive and significant relationship between the brand image and customer satisfaction in the context of cellular companies in Pakistan. It means that with an enhancement of brand image, the level of customer satisfaction enhances accordingly. This hypothesis (H_1) is consistent with several past studies (Erkmen & Hancer, 2019; Kittur & Chatterjee, 2021; Singh et al., 2021; Zehra & Arshad, 2019; Chakraborty, 2019; Le et al., 2021; Tam et al., 2022; Salehzadeh et al., 2018).

Meanwhile, the second hypothesis (H_2), which suggests that "network coverage and quality significantly affect customer satisfaction in the context of Pakistani cellular companies" was accepted ($\beta = 0.427$; $t = 3.875$; $p < 0.000$). It indicates a positive and significant impact of network coverage and quality on customer satisfaction. It means that the level of customer satisfaction is positively associated with the quality of network and coverage provided by the cellular company to its potential customers. The finding related to (H_2) is further justified by various empirical studies that reported similar results (Chakraborty, 2019; Chakraborty & Sengupta, 2013; Adam et al., 2018; Shafei & Tabaa, 2016; Grechyn & McShane, 2021; Kashyap et al., 2023; Kim, 2019; Delgado-Hernández & Palacios-Navarro, 2023; Coletta et al., 2021; Leong et al., 2022).

Similarly, the third hypothesis (H_3), which recommended that "price fairness significantly affects customer satisfaction in the context of Pakistani cellular companies" was accepted ($\beta = -0.282$; $t = 3.993$; $p < 0.000$). Thus, the findings related to the relationship between the price fairness and customer satisfaction indicated a significant and negative relationship between the underpinning variables. It indicates that the customer level of satisfaction decreases as price fairness increases, and vice versa. The finding related to (H_3) is further justified by various empirical studies that reported similar results (Shokouhyar et al., 2022; Leong et al., 2022; Illescas-Manzano et al., 2022; Alvarez; Leon et al., 2021; Venkatakrisnan et al., 2023; Mursid & Wu, 2022; Kumar Singh et al., 2022; Tanrisevdi et al., 2022).

Although, the fourth hypothesis (H_4), which quantified that "sales promotions significantly affect customer satisfaction in the context of Pakistani cellular companies" has also been supported by the bootstrapping results of the structure model ($\beta = 0.215$; $t = 2.452$; $p < 0.014$). Similarly, findings related to the relationship between the sales promotions and customer satisfaction showed a significant and positive relationship with the underlying variable. It means that the level of customer satisfaction increased as the sales promotion activities were enhanced. The finding of this hypothesis (H_4) is consistent with several past studies (Teck Weng & Cyril de Run, 2013; Langga et al., 2021; Othman et al., 2020; Gorji & Siami, 2020; He et al., 2022; Teixeira et al., 2022; Blom et al., 2021; Fam et al., 2022; Tzeng et al., 2021).

Correspondingly, the fifth hypothesis (H_5), which specifies that the "service quality significantly affects customer satisfaction in the context of Pakistani cellular companies" is also accepted ($\beta = 0.322$; $t = 2.509$; $p < 0.012$). The findings indicate a positive and significant relationship between the service quality and customer satisfaction in the context of cellular companies in Pakistan. This means that cellular companies in Pakistan may enhance the level of their customer satisfaction through the provision of better service quality. The finding related to (H_5), is in line with many past studies that

reported similar results (Teck Weng & Cyril de Run, 2013; Langga et al., 2021; Othman et al., 2020; Gorji & Siami, 2020; He et al., 2022; Teixeira et al., 2022; Blom et al., 2021; Fam et al., 2022; Tzeng et al., 2021).

Table 7. Hypothesis Testing Results (Bootstrapping @5000 subsamples)

Hypothesis:	Coefficient (β)	SD	T- Stat	P- Values	Decision
Direct Effects: -					
H1: Brand Image -> Customer Satisfaction	0.367	0.042	8.840	0.000	Accept
H2: Network Coverage & Quality -> Customer Satisfaction	0.427	0.110	3.875	0.000	Accept
H3: Price fairness -> Customer Satisfaction	-0.282	0.071	3.993	0.000	Accept
H4: Sales Promotion -> Customer Satisfaction	0.215	0.088	2.452	0.014	Accept
H5: Service Quality -> Customer Satisfaction	0.322	0.128	2.509	0.012	Accept

5. Conclusion and Discussions

The main goals of this study are to determine how consumer satisfaction (a dependent variable) is affected by brand image, network coverage and quality, price fairness, sales promotions, and service quality in the context of Pakistani cellular carriers (Jazz, Telenor, Zong, and U-Fone). The results in terms of brand perception, network coverage and quality, sales promotion, and service quality show a positive and significant association with customer satisfaction. On the other hand, we found a negative and significant relationship between price fairness and customer satisfaction (Kashyap et al., 2023; Leong et al., 2022; He et al., 2022; Teixeira et al., 2022; Elsotouhy et al., 2023). Customer satisfaction in Pakistan's cellular service sector is a complex phenomenon that is influenced by many different aspects. Positive brand perception, dependable network coverage, competitive pricing, customer-focused sales promotion, and great service quality, all have a significant impact on customer satisfaction. The interaction of these factors highlights how difficult it is to manage and maximize customer satisfaction in this fiercely competitive industry.

There are important practical ramifications for cellular firms operating in the region stemming from the investigation of multi-dimensional measures for evaluating customer satisfaction in the Pakistani cellular industry. Through the strategic consideration of multiple elements, including price fairness, sales promotion, network coverage and quality, brand image, and service quality, organizations can raise their customer satisfaction levels. Regarding brand image, Pakistani cellular firms ought to make investments towards cultivating a reputable and positive reputation. This entails keeping communication open and honest, delivering on brand commitments, and using consistent messaging. Enhancing network coverage and infrastructure is also essential for ensuring customer satisfaction. To reduce service interruptions and improve call and data quality, businesses should invest in expanding and improving their network. It's also crucial to strike a balance between service quality and pricing. Businesses should carry out in-depth market research to identify strategies for competitive yet fair pricing.

Furthermore, successful promotional methods can affect customers' perceptions, according to the study's findings. Companies should design promotions that resonate with their target audience and align with customer preferences. In conclusion, the results of this study suggest that Pakistani cellular providers ought to allocate resources toward employee training aimed at delivering exceptional customer service by responding immediately to inquiries and complaints. In summary, the study's findings provide Pakistani cellular providers with an advantage in the competitive telecommunications industry by promoting brand loyalty, a positive customer experience, and increased brand awareness. Remaining adaptable to changing client expectations and needs will require constant observation and adjustment based on feedback from the field.

5.1. Theoretical Implications

A useful theoretical framework for comprehending consumer satisfaction in the context of investigating multi-dimensional metrics within the Pakistani cellular industry is provided by the Expectancy-Disconfirmation Theory (EDT). According to this theory, the difference between perceived performance and expectations affects customer satisfaction. Theoretical insights can be obtained by applying EDT to cellular industry factors such as brand image, network coverage and quality, price fairness, sales promotion, and service quality. Customers set expectations based on

marketing messaging and past experiences, according to EDT. Increased customer satisfaction is a result of a positive disconfirmation (performing beyond expectations) related to brand image. Cellular companies in Pakistan may use EDT to make sure that their brand image meets or surpasses client expectations by coordinating their branding efforts with these expectations. Furthermore, EDT indicates that positive disconfirmation and increased satisfaction occur when users believe that the network is matching or surpassing their expectations. Businesses can use EDT to highlight locations where their service performs better than that of rivals and to manage and create reasonable customer expectations regarding network coverage and quality. Furthermore, according to EDT, satisfaction is impacted by the discrepancy between the value that was expected and the value that was experienced for the price paid. Through open pricing policies, cellular carriers can carefully manage customer expectations. Customer satisfaction is increased when the value proposition is well communicated and perceived value is either equal to or more than the anticipated price fairness. Moreover, EDT is relevant to sales promotions since consumers establish expectations regarding the advantages and worth of promotional offerings. Increasing contentment is a result of successful promotions that provide positive disconfirmation. Pakistani cellular firms are capable of creating campaigns that satisfy consumers, as well as attract new ones, guaranteeing that the real advantages outweigh their expectations. Finally, EDT emphasizes how customer satisfaction is shaped by the quality of the services provided. Positive disconfirmation and increased satisfaction occur when the actual service quality surpasses expectations. EDT is a useful tool for cellular firms to help them manage and surpass consumer expectations for service quality, which will ultimately lead to improved customer satisfaction. Therefore, cellular enterprises in Pakistan can gain a deeper theoretical understanding of how consumer expectations and perceptions interact by including the Expectancy-Disconfirmation Theory into the investigation of multi-dimensional metrics for assessing customer satisfaction. In the ever-changing telecommunications industry, this knowledge can guide strategic choices and interventions that foster positive disconfirmations and enhance consumer satisfaction and loyalty.

5.2. Practical Implications

As Pakistan's mobile market matures, cellular service providers must be cognizant of the dynamic nature of these drivers. It is important for cellular service providers to be vigilant. Strategies that successfully balance these variables are likely to provide higher levels of consumer satisfaction, which will ultimately boost customer loyalty and market competitiveness. As Pakistan's mobile market expands, the importance of the dynamic nature of these drivers becomes even more pronounced.. This study also emphasizes how important brand image, network quality and coverage, pricing, sales promotions, and service quality are in determining customer satisfaction in Pakistan's cellular sector. In a cutthroat industry, cellular service providers should concentrate on maximizing these factors to raise customer happiness and encourage loyalty. Moreover, this study emphasizes how crucial it is to evaluate customer satisfaction in the Pakistani cellular industry using multi-dimensional measures. In order to deliver top-notch customer experiences, cellular carriers should prioritize improving service quality, network performance, pricing policies, customer service, simplicity of use, and billing transparency. For those working in the industry who want to build client loyalty and keep up their competitiveness in a market that is changing quickly, the findings offer insightful information. The report ends with useful advice for cellular service providers on how to strategically manage and enhance brand image, network quality, pricing, sales promotion, and service quality to boost customer satisfaction levels.

5.3. Limitations and Future Avenues

The study may make use of information acquired from a specific clientele group, such as individuals who are available or willing to participate. The results could be biased because the sample might not accurately represent the entire user base of the Pakistani cellular industry. The results could not apply well to the larger population of cellular users in Pakistan, for instance, if the survey primarily comprises urban customers or those from a particular socioeconomic background. Additionally, the target population's follow-up interviews were done after the study's data had already been collected in order to assess how their behavior and experiences had changed over time. Therefore, only five independent factors were used in this study to assess the direct impact they had on customer

satisfaction. However, in the future, someone might notice how government regulations affect the link between underlying factors. The mediating function of front-line salesforce is also recommended for additional research. If secondary data are available, a model of the econometric kind is also suggested. In the context of Pakistan, a comparison between rural and urban clientele may also be taken into consideration for future research.

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