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The Influence of Service Quality on Brand Equity, Customer Satisfaction and Brand Loyalty: A Case Study of A Telecommunication Operator Company in China

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Abstract. Telecommunication service is increasingly affecting and changing our life. In the fiercely competitive environment, providing high service quality is becoming the most important factors of business success for either manufacturers or service providers. In this paper, the SERVQUAL model was used for evaluation of service quality of a selected telecommunication company in China while network quality facet was included in the analysis. This study also contributes to the concept of customer-based brand equity proposed by Aaker and Keller for telecommunication operator services. The facets include perceived quality, uniqueness, willingness to pay a price premium, brand awareness, brand familiarity, brand popularity, organizational associations, and brand image. The current study aims to explore the relationships among service quality, brand equity, brand loyalty, and customer satisfaction. The study collected the data from 302 customers of a selected telecommunication company in China. This study employed structural equation model for hypotheses testing. The results confirmed the relationships among service quality, brand equity, brand loyalty, and customer satisfaction. This study found that service quality has stronger impact on customer satisfaction than on brand equity. This study also found that service quality has slightly stronger impact on brand equity than brand loyalty. The impact of customer satisfaction on brand loyalty was confirmed. Therefore, this study suggested that telecommunication operator should improve service quality to enhance customer satisfaction. Meanwhile, service quality remains to be dominant predictor of brand equity. Hence, advancing service quality would induce short-term effect on customer satisfaction while elevate long-term effect on brand equity.

Keywords: Service quality, Brand equity, Customer Satisfaction, Brand Loyalty, telecommunication

INTRODUCTION

Over the last two decades, the centralized telecommunication monopoly in China have undergone tremendous changes. China telecommunications service industry has achieved world-renowned achievements. The telecommunications system has been reformed and free market competition are gradually deepening.¹ Therefore, the telecommunications service industry has attracted much attention from all over the world. Prior researches explored the role of service quality in telecommunication industry. However, limited research has studied the role of brand equity and service quality in telecommunication company in China. Therefore, the purpose of this study is to examine the relationship among service quality, brand equity, customer satisfaction, and brand loyalty. The current study also intended to identify level of service quality, brand equity, customer satisfaction, and brand loyalty of the selected telecommunication company in China. This research contributed to SERVQUAL model in telecommunication industry as well as application of customer-based brand equity.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Service Quality and Customer Satisfaction

Service quality and customer satisfaction are two distinctive constructs but highly correlated.² Oliver³ suggested disconfirmation paradigm to explain the gap between customer expectation and perceived performance that leads to customer satisfaction. Customer satisfaction related to fulfilling customer requirement and providing them long lasting benefits.⁴ Customer's satisfaction is fulfillment of the customer's needs and needs are changing continuously and when these changing needs are fulfilled continuously then customer become loyal with that particular product or service.⁵

With the growth of the mobile telecommunication services around the world, a significant body of literature has emerged over the past years. For example, Turel and Serenko⁶ empirically investigated customer satisfaction with mobile

services in Canada. They adapted the American Customer Satisfaction Model to identify the antecedents and consequences of customer satisfaction for young cellular subscribers. The results indicated that perceived service quality and perceived value are the key constructs affecting the customers satisfaction with telecom services. Satisfaction in turn leads to customer loyalty.

According to Athanassopoulos and Iliakopoulos⁷ study of the residential customers of a European telecommunication company revealed that customer perceived performance (i.e., satisfaction, recommendation to others, relationship and value for money) were affected by product performance satisfaction, directory enquiries, branch network, billing and corporate image.

In 1988 Parasuraman et al. introduce SERVQUAL⁸ and have revised model to include five dimensions of service quality which are reliable, tangible, responsive, assurance and empathy. Wang et al.⁹ investigated the impact of quality-related factors on customer value and customer satisfaction using structural equation modeling in China. They used the SERVQUAL⁸ factors (reliable, tangible, responsive, assurance and empathy) to measure service quality while adding “network quality” as another antecedent of customers’ perceived service quality. Results indicated that all the service quality factors had significant and positive impact on customer satisfaction. Also, customer perceived value had a moderating effect on the service quality and customer satisfaction link.

Kim et al.¹⁰ investigated the effect of different service features and switching barriers on customer satisfaction and customer loyalty in the Korean mobile telecommunication services sector. The results indicated that customer satisfaction is significantly and positively affected by call quality, value added services and customer support. Similarly, Lai et al.¹¹ tested the SERVQUAL model in China’s mobile communication industry using exploratory and confirmatory factor analysis. They found that the SERVQUAL instrument is a valid means for measuring service quality. They also identified “service convenience” as an important additional dimension of service quality in China’s mobile services sector.

Johnson and Sirikit¹² conducted their study on both landline and mobile users of Thai telecommunication industry using the service quality dimensions (reliability, responsiveness, assurance, empathy and tangibles). Tangibles emerged as the most important factor, but no significant link was found between the service quality ratings and the customers’ behavioral intentions. All these studies have looked at different facets of service quality or service features affecting customer satisfaction. In this study we consider the service-related factors in the China telecommunications sector.¹³ Hence, the following hypotheses were suggested:

Hypothesis 1: Service quality has positive impact on customer satisfaction

Service quality and Brand equity

According to Jarrell and Charles exam a new model and possible relationships between the quality of Internet- and human-delivered support services and online brand equity using the gaps model of service quality and the Online Retail/Service (ORS) model of brand equity. The result demonstrated a strong positive correlation between service quality and brand equity.¹⁴

Rousta and Madani¹⁵ conducted a research entitled as the relationship between the quality of services and the customer’s decision-making on the brand equity. The aim of their research was to investigate the impact of the quality of services on the brand equity, taking into account the mediator variable of the customer’s decision- making. The results showed that the quality of services is one of the most important factors influencing the brand equity and by considering the mediator variable of the customer’s decision-making this relationship become indirectly stronger.

Sadia et al.¹⁶ carried out a research entitled as how the quality of services affects the brand equity. The purpose of their research was to investigate the direct effect of the quality of services on the brand equity, along with the mediator role of the validity of great companies and perceived value. The results showed that the perceived value and the validity of the great companies affect in a fully mediated way the relationship between quality of services and customer-based brand equity.

Tuan¹⁷ conducted a research entitled as clinical governance, companies’ social responsiveness, health of quality of services and the brand equity. The aim of this study was to investigate the impact of the quality of the patient care services on brand equity of hospitals. The results showed that the high quality of services causes to make sure the patients of the performed services and recommend the hospital to others. In this research, the dimensions of the quality of services included the cleanliness of departments, advanced medical equipment, proper acceptance procedure and behavior of the hospital personnel.

Venkatesan et al.¹⁸ carried out a research entitled as the effects of services on the brand equity of retail channel. Their research aimed to investigate the reciprocal effects of quality of services and the quality electronic services on the retail brand equity as well as the effectiveness of the service environment on the retail brand equity. Research results showed that the consumer’s perception of quality of services and the quality e-services have on a positive influence on the retail brand equity. Their research also showed that the quality of online services has more impact on the consumer’s perception of retail brand equity in comparison with the offline one.¹⁹Hence, the following hypotheses were suggested:

Hypothesis 2: Service quality has positive impact on brand equity

Customer Satisfaction and Brand Loyalty

As a general rule, customer satisfaction and brand loyalty are very closely related. Customer satisfaction functions as an antecedent of brand loyalty. It prevents customer churn and consolidates retention, thereby constituting an important cause of brand loyalty.²⁰ Brand loyalty is more valuable than customer satisfaction. When consumers are satisfied with the product/brand, they are more likely to recommend the product to others, are less likely to switch to other alternative brand, and are likely to repeat purchase.²¹ Szymanski and Henard²² using a meta-analysis of satisfaction advocated satisfaction as a direct antecedent of loyalty. Fornell²³ also established that satisfaction directly influences loyalty although he found that the link depends on the industrial context.

According to Heskett et al.²⁴ unhappy customers are more likely to speak out against a poorly delivered service at every opportunity. In some instances, they even can discourage acquaintances from trying a service or product. On the other hand, “Apostles” are those customers who are truly satisfied with the company and the service offered resulting in true loyalty to the company. Satisfied customers are prepared to pay more for the product or services. Every satisfied customer is supposed to spread the positive word of mouth to community they live in. Thus, satisfaction is the main driver of loyalty and for that customer must be highly satisfied.

“Satisfaction” is an attitude, whereas loyalty is described as a behavior. Chen and Wang²⁵ suggest a view of customer satisfaction as a kind of consistency evaluation between prior expectations and perceived service performance. Accordingly, the positive evaluation of the product or service that the customer acquires is a major reason to continue a relationship with a company’s service or products, and an important pillar that upholds loyalty. Satisfied customers are thus more likely to repurchase, lower their price sensitivity, engage in positive word-of-mouth recommendation, and become loyal customers.

Customer satisfaction and loyalty represent a top priority of the company's success and profit²⁶. Brand loyalty can be considered to be a byproduct of customer satisfaction. The satisfaction of business customer leads to brand loyalty. Is clear that there is a significant positive relationship between customer satisfaction and brand loyalty. Brand loyalty leads to an increase in both sales and profitability²⁷. Hence, the following hypothesis was suggested:

Hypothesis 3: Customer satisfaction has positive impact on brand loyalty.

Brand Loyalty and Brand Equity

Aaker²⁸ view customer-based brand equity (CBBE) as set of assets (liabilities) attached to a brand’s name and symbol that adds to (or subtracts from) the value provided²⁹. Primary proposed facets of brand equity are perceived quality, uniqueness, willingness to pay a price premium. Meanwhile, Keller³⁰ views CBBE as the effect of brand knowledge toward consumer response regards to the marketing of the brand. The proposed facets of brand equity are brand awareness, brand familiarity, brand popularity, organizational associations, and brand image.

Brand loyalty is related to the users’ repetitive buying behaviour over time with a positively biased emotive, evaluative and/or behavioural tendency towards a branded, labelled or graded alternative or product choice³¹. According to Yoo³², brand loyalty has the power to impact on customer decision to purchase the same product or brand and decline to shift to competitive brands. According to Marshall³³, brand loyalty is a thought that firms emphasizes, while it may create or sustain a customers' patronage over the long-term, thereby increases brand equity. Thus, brand loyalty is located in the heart of brand equity.

Aaker³⁴ defines brand loyalty as a situation which reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or in product features. Moreover, Chaudhuri³⁵ defines brand loyalty as “a consumer’s preference to buy a single brand name in a product class; it is a result of the perceived quality of the brand and not its price”. According to Kim et al.³⁶, brand loyalty is a deeply held commitment to re-buy or re- patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.”

In fact, brand loyalty is the main driver of brand equity because it is considered to be the path that leads to certain marketing advantages and outcomes (for example, reduced marketing costs, price premiums, market share and greater trade leverage), which have been closely associated with brand equity (Delgado et al.,³⁷; Yasin et al.,³⁸; Bamert et al.,³⁹; Atilgan et al.,⁴⁰; Bravo et al.,⁴¹).Hence, the following hypothesis was suggested:

Hypothesis 4: Brand loyalty has positive impact on brand equity.



FIGURE 1. Research Model

METHODS

The study intends to explore and verify customers service quality effect on brand equity, customer satisfaction and brand loyalty of telecommunication company in China. The self-management questionnaires were designed for random sampling. The population of the current study are customers of the selected telecommunication company in China. The number of populations of the current study is unknown so Cochran approach was adopted with 90% confident interval⁴². Thus, the samples size should be at least 270. This study randomly distributed 1,000 self-management questionnaires online to customers of the selected telecommunication company in China. The study obtained 302 valid questionnaires, thus, complete the minimum requirement of sample size.

Quantitative method is applied for this study using descriptive analysis as well as structural equation model to test hypotheses. All of the Likert-type measures of the current study were adapted from established reliable scales. The measurement items are in five point Likert scale anchored by “Strongly Disagree” = ‘1’ to “Strongly Agree” = ‘5’. The questionnaire includes measurement items for service quality, customer satisfaction, brand equity, customer satisfaction, and brand loyalty. For Service quality, it was measured with 28 items that include six dimensions developed from Rahhal⁴³, the six dimensions are “tangibles”, “reliability”, “responsiveness”, “assurance”, “empathy”, and “network quality”. For customer satisfaction, it was measured in five items developed from. For brand loyalty, the measurement brand loyalty items include five items by Punniyamoorthy & Raj⁴⁴. For brand equity, developed from Netemeyer et al.²⁹ the eight dimensions include perceived quality, uniqueness, willingness to pay a price premium, brand awareness, brand familiarity, brand popularity, organizational associations, brand image.

VALIDITY AND RELIABILITY TEST

For service quality, that CMICMIN/DF is 1.163, which is less than the standards of 3, AGFI, GFI, NFI, TLI, IFI, CFI all more reach the standard of 0.9, RMR is 0.043, less than 0.08, RMSEA is 0.023, less than 0.08, all fit the indicators meet the general research standards, so it can be considered that this model is well matched. In addition, the standardization factor load of each measurement index of Tangibles, Reliability, Responsiveness, Assurance, Empathy, and network quality are all greater than 0.6. The composition reliability (CR) were 0.905, 0.853, 0.884, 0.873, 0.831, 0.836, 0.795, all greater than 0.7, and the average variation extraction (AVE) were 0.614, 0.538, 0.521, 0.579, 0.552, 0.561, 0.564, all greater than 0.5, which show that all dimensions have good convergence validity.

For customer satisfaction, that CMICMIN/DF is 2.574, which is less than the standards of 3, AGFI, GFI, NFI, TLI, IFI, CFI all more reach the standard of 0.9, RMR is 0.026, less than 0.08, RMSEA is 0.072, less than 0.08, all fit the indicators meet the general research standards, so it can be considered that this model is well matched. In addition, the standardization standardized factor load of each measurement index of Customer Satisfaction is greater than 0.6, The composition reliability (CR) is 0.856 greater than 0.7, and the average variation extraction amount (AVE) is 0.544 greater than 0.5. It shows that customer satisfaction has good convergence validity.

For brand loyalty, that CMICMIN/DF is 1.55, which is less than the standards of 3, AGFI, GFI, FI, TLI, IFI, CFI all more reach the standard of 0.9, RMR is 0.022, less than 0.08, RMSEA is 0.043, less than 0.08, all fit the indicators meet the general research standards, so it can be considered that this model is well matched. In addition, the standardization standardized factor load of each measurement index of brand Loyalty is greater than 0.6, The composition reliability (CR) is 0.842 greater than 0.7, and the average variation extraction amount (AVE) is 0.517 greater than 0.5, It shows that brand loyalty has good convergence validity.

For brand equity, that CMICMIN/DF is 1.165, which is less than the standards of 3, GFI and AGFI are both above 0.8, and NFI, TLI, IFI, and CFI are both above 0.9. RMR is 0.049, less than 0.08, RMSEA is 0.023, less than 0.08, all fit the

indicators meet the general research standards, so it can be considered that this model is well matched. In addition, the normalization factor load of each measurement index of Perceived quality, Uniqueness, WTPAPP, Brand awareness, Brand familiarity, Brand popularity, Organizational associations, and Brand image is greater than 0.6, and the composition reliability (CR) is 0.923, 0.918, 0.835, 0.866, 0.818, 0.829, 0.832, 0.871, 0.884 are all greater than 0.7, and the average variation extraction amount (AVE) is 0.6, 0.583, 0.559, 0.619, 0.601, 0.619, 0.624, 0.629, 0.604 and greater than 0.5, indicating that each variable has good convergence validity.

FINDINGS

As shown in table 1, this study includes 302 respondents. Of those, 64.2 % (194) are male and 35.8% (108) are female. Most respondents (31.1%, 94) were between 18 and 25 years, (31.1%, 94) between 26 and 35 year, and (31.1%, 94) between 36 and 45 years of age. Most respondents (53.6%, 162) were graduated from high school. Most of respondents (23.8%, 72) monthly income are between 5,501~7,500 yuan/month. Most of respondents (52.3%, 158) used services of the selected company 2-3times per month. Most of respondents (32.5%, 98) has been using services of the selected company for 2-4 years.

TABLE 1. Respondent Characteristic

	Categories	Frequenc	Percentag
Gender	Male	194	64.2
	Female	108	35.8
Age	18-25years old	94	31.1
	26-35years old	94	31.1
	36-45years old	94	31.1
	46-55years old	11	3.6
	More than 55years old	9	3
Education level	High school	162	53.6
	Bachelor degree	95	31.5
	Master degree	33	10.9
	Doctoral degree	12	4
Income monthly	0~2,500yuan/month	60	19.9
	2,501~3,500yuan/month	56	18.5
	3,501~5,500yuan/month	48	15.9
	5,501~7,500yuan/month	72	23.8
	More than 7,500yuan/month	66	21.9
Job level	Entry level	45	14.9
	Intermediate level	97	32.1
	Supervisor level	50	16.6
How often do you use China Telecom service within one month	Director and above level	110	36.4
	0-1time	25	8.3
	2-3times	158	52.3
	4-5times	37	12.3
	more than 5 times	82	27.2
How long have you use the service with China Telecom	Less than 2years	91	30.1
	2-4years	98	32.5
	5-6years	81	26.8
	More than 6years	32	10.6

As shown in table 2 and table 3, the overall mean of service quality is 3.869. For service quality, reliability facet obtained the highest rating (4.001) while network quality facet obtained the lowest rating (3.734). The overall mean of brand equity is 3.911. For brand equity, willingness to pay at higher price (WTPAPP) facet obtained the highest rating (4.064) while brand popularity facet obtained the lowest rating (3.573). The overall mean of customer satisfaction is 3.912. The overall mean of brand loyalty is 4.029.

TABLE 2. Mean of service quality and brand equity

Service Quality			Brand Equity		
	Mean	Standard deviation		Mean	Standard deviation
Tangibles	3.811	0.845	Perceived quality	4.008	0.892
Reliability	4.001	0.837	Uniqueness	4.058	0.852
Responsiveness	3.873	0.901	WTPAPP	4.064	0.882
Assurance	3.923	0.918	Brand awareness	3.895	0.94
Empathy	3.874	0.896	Brand familiarity	3.778	1.012
Network quality	3.734	0.952	Brand popularity	3.573	0.98
			Organizational associations	3.862	0.984
			Brand image	4.049	0.92

TABLE 3. Summary of variable means

	Mean	Standard deviation
Service quality	3.869	0.690
Customer Satisfaction	3.912	0.834
Brand equity	3.911	0.710
Brand Loyalty	4.029	0.835

Model Fit Test

From the table 4, it shows that CMIN/DF is 1.203, which is less than standards of 3. GFI, AGFI, NFI, TLI, IFI, and CFI are more than the standard of 0.9. RMR is 0.047 which is less than 0.08. RMSEA is 0.026 which is less than 0.08. Each fitting indicators meet the general research standards, so it can be considered that this model is well-fitted.

TABLE 4. Model Fit Test Results

Model fit	Recommended values	Structural model
CMIN	—	298.319
DF	—	248
CMIN/DF	<3	1.203
RMR	<0.08	0.047
GFI	>0.8	0.924
AGFI	>0.8	0.909
NFI	>0.9	0.912
IFI	>0.9	0.984
TLI	>0.9	0.982

CFI	>0.9	0.984
RMSEA	<0.08	0.026

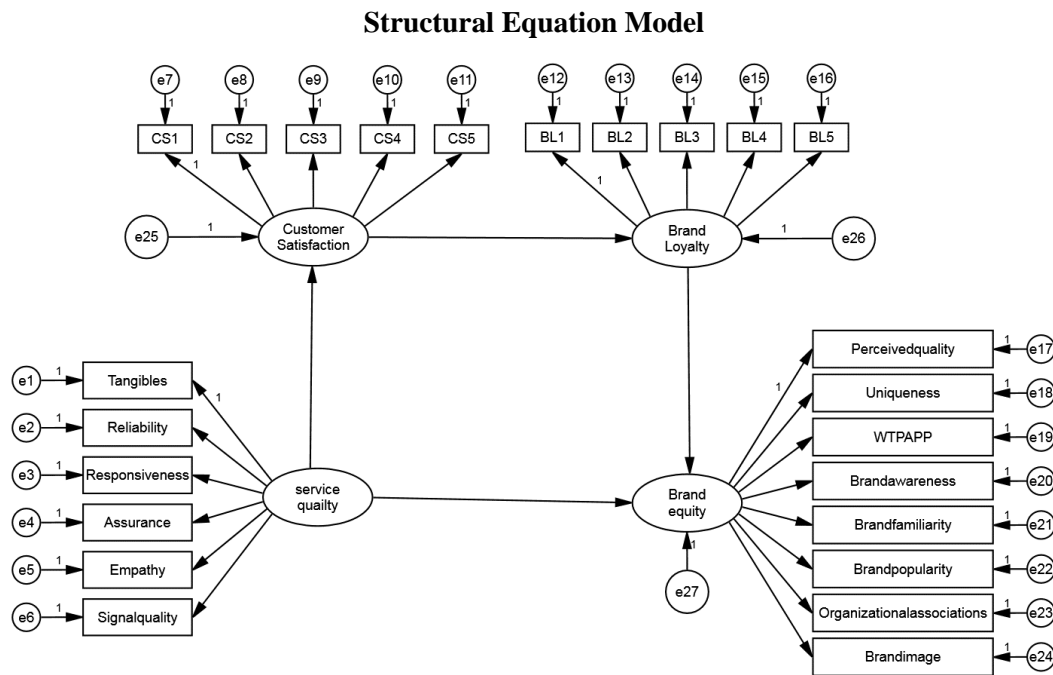


FIGURE 2. Structural equation model

As shown in table 5, service quality has positive impact on customer satisfaction ($\beta=0.576$, $p<0.05$). Hence, hypothesis 1 was supported. Service quality has positive impact on brand equity ($\beta=0.356$, $p<0.05$). Hence, hypothesis 2 were supported. Customer satisfaction has positive impact on brand loyalty ($\beta=0.282$, $p<0.05$). Hence, hypothesis 3 was supported. Brand loyalty has positive impact on brand equity ($\beta=0.254$, $p<0.05$). Hence, hypothesis 4 was supported.

TABLE 5. Path coefficient

Path	Standardize	Unstandardized	S.E.	C.R	P	Result
Customer Satisfaction ← Service Quality	0.576	0.775	0.096	8.063	**	Supported
Brand equity ← Service Quality	0.356	0.367	0.06	5.35	**	Support
Brand Loyalty ← Customer Satisfaction	0.282	0.247	0.061	4.085	**	Supported
Brand equity ← Brand Loyalty	0.254	0.222	0.05	3.90	**	Support

DISCUSSIONS AND CONCLUSIONS

The purpose of this study was to identify the underlying role of service quality. Then examined the impact of service quality on customer satisfaction, brand loyalty and brand equity. This study confirmed that six dimensions (tangibles, reliability, responsiveness, assurance, empathy, network quality) of service quality significantly impact on customer satisfaction and brand equity. It also shows that brand loyalty has significantly positive impact on brand equity. This indicates that all hypotheses are supported.

First, this study found that service quality has positive impact on customer satisfaction, the finding is consistent with Turel and Serenko⁶ that found perceived service quality is the key constructs affecting the customers satisfaction with telecom services. The finding is consistent with Sandhu² that found service quality and customer satisfaction are two distinctive constructs but highly correlated. The finding is consistent with Turel and Wang¹³ that found the service quality factors (reliable, tangible, responsive, assurance and empathy) had significant and positive impact on customer satisfaction. Consistently, Ear et al.⁴⁵ found that service quality to has positive impact on customer satisfaction and customer loyalty in low-cost airline. Thus, hypotheses 1 is supported. This is made evident by the fact that customers service quality would enhance customers satisfaction.

Second, service quality has positive impact on brand equity. The finding is consistent with Jarrell¹⁴ that found a strong positive correlation between service quality and brand equity. The finding is also consistent with Rousta and Madani¹⁵ that found the quality of services is one of the most important factors influencing the brand equity and by considering the mediator variable of the customer's decision-making this relationship become indirectly stronger. The finding is consistent with Sadia⁴⁶ that found the perceived value and the validity of the great companies affect in a fully mediated way the relationship between quality of services and customer-based brand equity. The finding is consistent with Venkatesan¹⁸ that found the consumer's perception of quality of services and the quality e-services have on a positive influence on the retail brand equity. Thus, hypotheses 2 is supported.

Third, customer satisfaction affects brand loyalty. The finding is consistent with Fornell⁴⁷ that found satisfaction directly influences loyalty. The finding is consistent with Heskett²⁴ that found satisfaction is the main driver of loyalty. The finding is consistent with Chen and Wang²⁵ that found satisfied customers are thus more likely to repurchase, lower their price sensitivity, engage in positive word-of-mouth recommendation, and become loyal customers. Hence, previous papers found the strong effect of customer satisfaction on brand loyalty. Therefore, hypotheses 3 is supported.

Fourth, this study found that brand loyalty has positive impact on brand equity. The finding is consistent with Marshall³³ that found the brand loyalty is located in the heart of brand equity. The finding is consistent with Kim¹⁰ that found the brand loyalty having the potential to cause switching behavior. Hence, hypotheses 4 is supported.

This study found that service quality has stronger impact on customer satisfaction ($\beta=0.576$) than on brand equity ($\beta=0.356$). This study also found that service quality ($\beta=0.356$) has slightly stronger impact on brand equity than brand loyalty ($\beta=0.254$). The impact of customer satisfaction on brand loyalty was confirmed ($\beta=0.282$). Therefore, this study suggested that telecommunication operator should improve service quality to enhance customer satisfaction. Meanwhile, service quality remains to be dominant predictor of brand equity. Hence, advancing service quality would induce short-term effect on customer satisfaction while elevate long-term effect on brand equity.

MANAGERIAL IMPLICATION

First, improve the network quality. For network quality, the average value is 3.734, was rated the lowest among six service quality dimensions. The company need to upgrade the network or use 5G network to improve the network quality. For example, acquire new disruptive ideas to secure the better network quality of the telecom network market and foster growth for the future. Upgrade the network or use 5G network will provide a first experience on thousands of devices that process unprecedented amounts of personal data. It is clear that there is a need for a more intelligent data and improve the network quality in motion security solution that can accommodate the diverse range of network cases.

Second, particular attention has to be given to customers satisfaction, brand loyalty and brand equity related to the service quality. Though there has been much debate on the service quality subject, it is clear that service quality is most positive impact on customer satisfaction ($\beta=0.576$) compared to other relationship (service quality and brand equity ($\beta=0.356$), customer satisfaction and brand loyalty ($\beta=0.282$), and brand loyalty and brand equity($\beta=0.254$)). Consequently, the company should have more comprehensive picture of how marketers can create value for a brand. By recognizing that marketing activity can potentially enhance or maintain consumers' awareness of the brand or the favorability, strength, and uniqueness of various types of brand associations, enable marketers to take better short-term and long-term marketing actions. In particular, improving service quality that enhance customer satisfaction, brand loyalty and brand equity these application in practice.

Third, customer surveys should be frequently conducted among the selected company customers to inquire their requirements and expectations. The respondent characteristics, such as gender, age, education, and the frequency of using services and products and so on. In addition to these characteristics and the previous dimensions, a self-answering question should be set up for customers to fill in, so as to understand the true needs of customers to meet customer needs and to improve customer satisfaction.

Fourth, the rating of brand equity, brand popularity dimension should be improved. The mean of brand popularity is 3.573 which is the lowest among other dimensions (Perceived quality, Uniqueness, WTPAPP, Brand awareness, Brand familiarity, Organizational associations, and Brand image) of brand equity. So brand popularity should be improved. The

company should carried out a competition for daily telecom knowledge to the countryside throughout the country, which further increased enthusiasm of various provincial-level branch companies, increased the promotion of internet and internet mobile phone brand, then greatly improved brand awareness.

The company should strive to ensure a high level of customer satisfaction, which may eventually lead to customer retention and good financial performances. Ensuring customer satisfaction could be obtained by focusing and continuously improving the quality of different antecedents related to service quality examined in the current study. The findings of this study are helpful to telecom operators to tailor their products/services and pricing strategies to maximize the telecom service users' satisfaction and retention, and could eventually be generalized this business.

SUGGESTIONS and FURTHER RESEARCH

The current research focused on the main antecedents driving customer satisfaction within domestic telecommunications users. Previous scholars have found that the service quality has a significant influence on customer satisfaction⁴. It has been showed in the current research analysis that service quality has strong effects on customer satisfaction and network quality was included in SERVQUAL for telecommunication service. The study found that service quality has stronger impact on customer satisfaction than on brand equity. Therefore, this study suggested that telecommunication operator should improve service quality to enhance customer satisfaction. The study also found that service quality has slightly stronger impact on brand equity than brand loyalty. Further research should include other dimensions of service quality in the analysis. In addition, future research should include the role of customer orientation on brand equity in telecommunication business. Further research should explore the role of brand relationship and brand commitment as moderator or dependent variable in the research model.

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