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EXPLORING THE EFFECTS OF SERVICE QUALITY ON CUSTOMER LOYALTY: AN EMPIRICAL STUDY OF VINAPHONE

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ARTICLE INFO	ABSTRACT
	This study was conducted to determine the service quality factors affecting customer loyalty to Vinaphone mobile services in Vietnam. Based on the survey results of 250 customers who have participated in using Vinaphone's mobile services, the collected data is processed by the SPSS 25.0 software, including descriptive statistics, and the reliability test of the scale measured by Cronbach's Alpha method, exploratory factor analysis (EFA), analysis of multiple linear regression models. The results after analyzing the data identified five factors of service quality that affect customer loyalty in descending order: call quality, convenience, value-added services, customer support services, and reliability. Based on the research results, five management implications have been proposed to help Vinaphone's network improve customer loyalty through improving service quality.

1. Introduction

Vietnam's mobile phone service market has long been in a state of saturation. With a population of about 100 million people, Vietnam has nearly 140 million mobile phone subscribers (ICTnews, 2022). Therefore, the competition between mobile networks in Vietnam is very fierce. In that context, Vietnamese mobile phone service networks need to focus on retaining customers by increasing their loyalty. According to Kim et al. (2004), service quality will affect customer satisfaction, thereby increasing the loyalty of customers using mobile phone services in Korea. Mokhtar et al. (2011) also pointed out that service quality is a key factor that increases the loyalty of mobile phone service users who are graduate students of a university in North Malaysia. Munyanti & Masrom (2018) also show that the loyalty of customers using mobile phone services is affected by service quality.

Service quality and loyalty perceived by customers vary across countries and cultures.

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Many studies have shown that the factors of service quality vary between different industries and between different countries (Taylor & Cronin, 1992). Service quality can affect customer loyalty to the enterprise. The influence can be direct, and it can also be indirect (Du & Tang, 2014). Besides, previous studies have shown that there is a difference in the service quality component affecting customer loyalty when the study was conducted with different mobile phone networks in different countries. Some studies found that call quality and value-added afected services can affect customer loyalty (Kim et al., 2004, Mokhtar et al., 2011; Munyanti & Masrom, 2018; Nguyen Bach Khoa, 2020; Ha Nam Khanh Giao & Tran Huu Ai, 2012) but Pham Le Thong & Nguyen Thi Thien Hao (2014), and Huynh Minh Nhut (2020) did not agree those relationships. Beside, previous studies found that customer loyalty was impacted by customer support services (Mokhtar et al., 2011; Truong Dong Loc & Su Quang Thai, 2010; Pham Le Thong & Nguyen Thi Thien Hao, 2014; Huynh Minh Nhut, 2020; Nguyen Bach Khoa, 2020) but Munyanti & Masrom (2018), and Ha Nam Khanh Giao & Tran Huu Ai (2012) showed that there was no relationship between customer loyalty and customer support services. In addition, there were different findings in the relationship between convenience, reliability and customer loyalty (Kim et al., 2004, Mokhtar et al., 2011; Munyanti & Masrom, 2018; Truong Dong Loc & Su Quang Thai, 2010; Nguyen Bach Khoa, 2020; Ha Nam Khanh Giao & Tran Huu Ai, (2012) and Huynh Minh Nhut, 2020; Mokhtar et al., 2011; Pham Le Thong & Nguyen Thi Thien Hao, 2014). In summary, the results of previous studies are still conflicting on the impact of call quality, value-added, customer support services, convenience, and reliability on customer loyalty. So, further studies in different contexts are needed to confirm these effects. Therefore, it is necessary to consider and study the influence of service quality on customer loyalty to the Vinaphone mobile phone service network. The following content will present (2) Theoretical background and hypotheses; (3) Methodology; (4) Results; (5) Discussion; and (6) Conclusion.

2. Theoretical background and hypotheses

Service quality

Lehtinen & Lehtinen (1991) argued that service quality must be assessed on two aspects, (1) service delivery process and (2) service results. Gronroos (1984) also suggested two areas of service quality, namely (1) technical quality and (2) functional quality. According to Parasuraman et al. (1985) built and tested a 5-component scale of service quality called SERVQUAL (Service Quality) scale. According to Parasuraman, service quality cannot be determined in general, but depends on the customer's perception of the service, and this perception is considered on many factors. SERVQUAL model is built based on the view that perceived service quality is the comparison between expected and perceived values by customers. Service quality is equal to the customer's perceived level minus the expected value. The model consists of five components: reliability, responsiveness, tangibles, assurance, and empathy. In practice, the measurement of expected value and perceived value according to Parasuraman et al. (1985) makes it difficult to process the data. Cronin & Taylor (1992) developed the SERVPERF model based on the model and SERVQUAL scale of Parasuraman et al. (1985). But Cronin & Taylor (1992) argued that service quality is the customer's perception. The SERVPERF scale overcomes some difficulties of the SERVQUAL scale and is used to measure customers' perceptions, thereby determining service quality, instead of measuring both perceived and expected quality like the SERVQUAL scale. Cronin & Taylor (1992) argue that "the level of customer perception towards the service performance of the enterprise best reflects the service quality". This conclusion has been agreed by other authors. In general, service quality is the level of satisfaction, which is what customers perceived when enjoying the service.

Customer loyalty

Aaker (1991) defined customer loyalty as the extra attachment that a consumer has toward a brand. Another author, Chaudhuri (1999) also introduced the concept of loyalty: customers are considered brand loyal when they tend to buy many products of a certain brand and buy again. Engel & Blackwell (1982) also define loyalty as the attitudes and behaviors that are well responded to by one or more brands towards a product category during a period of time by a customer. According to Oliver (1999), "attributive loyalty represents a consumer's sensory-perception binding and may include praise, purchase intention, recommendation of others to consume, for a particular product or service. product or service". Yoo & Donthu (2001) argue that loyalty is the tendency to be loyal to a central brand, as evidenced by the intention to purchase that brand as the first choice. Ball (2006) states that customer loyalty is signified that customers have established a commitment to transact with the business to purchase products and services on a regular basis. Although there are many different definitions, it can be summarized that customer loyalty is reflected in the fact that customers continue to use that brand while always remembering the brand for future plans, and at the same time willing to recommend and advise to those who want to use that brand.

Vinaphone mobile service quality

According to a literature review of previous studies and based on the theory of service quality. The Vinaphone mobile phone service quality is determined by five factors: Call quality, Value added services, Customer support services, Convenience, and Reliability.

Table 1. Factors of the Vinaphone mobile phone service quality

Factors	Mokhtar et al. (2011)	Kim et al. (2004)	Munyanti & Masrom (2018)	Truong Dong Loc & Su Quang Thai (2010)	Pham Le Thong & Nguyen Thi Thien Hao (2014)	Huynh Minh Nhut (2020)	Nguyen Bach Khoa (2020)	Ha Nam Khanh Giao & Tran Huu Ai (2012)
Call quality	x	x	x	x			x	x
Value-added services	x	x	x	x			x	x
Customer support services	x	x		x	x	x	x	
Convenience				x			x	
Reliability				x		x		x

Call quality

According to Truong Dong Loc & Su Quang Thai (2021), call quality is the customer's perception of voice quality such as comfort, clarity of sound, uninterrupted signal, wide coverage area for communication everytime everywhere. Customers will feel more comfortable and easier to stick with the service of the provider when the call quality is good. This has also been verified by different studies (Kim et al., 2004, Mokhtar et al., 2011; Munyanti & Masrom, 2018; Nguyen Bach Khoa, 2020; Ha Nam Khanh Giao & Tran Huu Ai, 2012).

Hypothesis H1: Call quality has a positive impact on customer loyalty using Vinaphone mobile services.

Value-added services

In the field of telecommunications, value-added service is a service that adds value to the

information of service users by improving the type and content of information or providing the ability to store and restore information. such information on the basis of using telecommunications networks or the Internet. Value-added services give customers more choices and more service experiences, which in turn can increase customer satisfaction and loyalty (Kim et al., 2004; Mokhtar et al., 2011, Munyanti & Masrom, 2018; Nguyen Bach Khoa, 2020; Ha Nam Khanh Giao & Tran Huu Ai, 2012).

Hypothesis H2: Increased service has a positive impact on customer loyalty using Vinaphone mobile services.

Customer support Services

Customer support service is about carrying out work in a sequence that allows customer service problems to be handled efficiently, questions answered politely, and concerns resolved quickly. quick release. Customer support service is evaluated through aspects such as the polite attitude of staff, quick receipt and resolution of complaints, complete customer support information, etc. (Kim et al., 2004). Customer support service is the factor that increases the customer's sympathy for the service and the supplier (Mokhtar et al., 2011; Truong Dong Loc & Su Quang Thai, 2021; Pham Le Thong & Nguyen Thi Thien Hao, 2014; Huynh Minh Nhut, 2020; Nguyen Bach Khoa, 2020).

Hypothesis H3: Customer support services have a positive impact on customer loyalty using Vinaphone mobile services.

Convenience

Convenience is the customer's perception of the utility when accessing and switching services. Convenience is determined through easy registration to use the service, the transaction system is located at a convenient location, the working time of the transaction office is suitable,... Evidence from research Experiments show that convenience has a positive effect on customer loyalty (Truong Dong Loc & Su Quang Thai, 2021; Nguyen Bach Khoa, 2020).

Hypothesis H4: Convenience has a positive impact on customer loyalty using Vinaphone mobile services.

Reliability

According to Parasuraman et al. (1988), reliability is the ability to perform services appropriately and on time from the outset. Reliability is defined as the degree to which service delivery is accurately and reliably guaranteed. Reliability as the ability to accurately deliver the promised service. accurate and reliable. Thus, it shows how accurately and reliably service providers can provide services. According to Truong Dong Loc and Su Quang Thai (2021) Reliability in the telecommunications sector is demonstrated by not cheating in charging, the operator doing exactly what it advertised and trust has an impact on customer loyalty. This also was confirmed by Ha Nam Khanh Giao & Tran Huu Ai (2012) and Huynh Minh Nhut (2020).

Hypothesis H5: Reliability has a positive impact on customer loyalty using Vinaphone mobile services.

3. Methodology

Mixed qualitative and quantitative research methods were used. Qualitative research was conducted through interviews with 10 customers of Vinaphone network in order to adjust the questions to make the survey easy to understand. Quantitative research was conducted through survey of 250 customers with convenient sampling method. Collected data are processed with the evaluation of the reliability of the scale through Cronbach's Alpha coefficient, exploratory factor analysis EFA, and multiple regression analysis.

4. Results

4.1. The demography analysis of the respondents

The survey results of 250 customers showed that there were 152 women, accounting for 63.2%, and 98 men participated in the survey, accounting for 39.2%. Thus, in this study, the number of female participants in the survey was approximately 1.5 times higher than the number of male participants in the survey.

According to the description, the group of survey respondents under the age of 18 accounted for 10.8%, from 18 to 25 years old accounted for 35.2% and the group of 26 to 35 years old accounted for 24.8%, the group of survey respondents aged 36 to 50 years old. accounted for 20.8% and the group of people over 50 years old accounted for 35.4%. Thus,

in this study, customers are relatively evenly distributed in different age groups.

According to the description, customers with less than a college education account for 20%, the majority of which 66% are those with college and university degrees, and post-graduates account for 14%. This percentage has a big difference, most of the survey respondents have a high level of education from a university or higher.

The proportion of customers with an income of less than 5 million VND/month accounted for 15.6% and those with income from 5 to 10 million VND/month accounted for 31.6%, the group of people with income from 11 to 20 million VND/month. accounted for 28% and the group of customers with an income of over 20 million VND/month accounted for 24.8%.

Table 2. The demography analysis of the respondents

Items		Quantity	Ratio (%)
Gender	Male	98	39.2
	Female	152	60.8
Age group	under 18	27	10.8
	From 18 to 25	88	35.2
	From 26 to 35	62	24.8
	From 36 to 50	52	20.8
	>50	21	8.4
Education	Under College degree	50	20.0
	College and university degree	165	66.0
	Post graduate	35	14.0
Income	Under 5 million VND	39	15.6
	From5 to 10 million VND	79	31.6
	From5 11 to 20 million VND	70	28.0
	> 20 million VND	62	24.8
Total		250	100.0

4.2. Testing of reliability and validity of the measurement scales

Table 3. Reliability and validity of the measurement scales

No.	Items		Factor loading	Cronbach's Alpha	Source
Customer support Services					
1	CSS2	The support operator answers quickly	0.837	0.875	Kim et al. (2004)
2	CSS6	Complaints are accepted and resolved quickly	0.793		
3	CSS1	There are many customer support systems	0.773		
4	CSS4	Dedicated customer support staff	0.772		
5	CSS3	The attitude of the support staff is courteous and polite	0.768		
6	CSS5	Staff explain, instructions short and easy to understand	0.701		
Convenience					
7	CON3	New network connection procedure, change of tariff plan, subscription form... easy and fast	0.920	0.877	Kim et al. (2004)
8	CON4	The procedure to change and change a new sim due to loss of phone or damaged sim is done easily and quickly at all transaction offices.	0.862		
9	CON1	Wide system of transaction rooms	0.728		
10	CON2	The working hours of the transaction offices are suitable	0.705		
Value-added services					
11	VAS1	Offers a variety of value-added services	0.870	0.853	Kim et al. (2004)
12	VAS4	Regularly receive additional service introduction information and announcements from suppliers	0.821		
13	VAS2	Easy registration and use of value-added services	0.806		
14	VAS3	Value-added services are always updated and expanded	0.664		
Call quality					
15	CQU3	When making a network call, there is no network drop, signal loss	0.825	0.809	Kim et al. (2004)
16	CQU2	Vinaphone network has wide coverage	0.819		
17	CQU1	Clear conversation sound quality	0.738		
18	CQU4	When I need to communicate, you can connect immediately, without network congestion	0.703		
Reliability					
19	REL2	Provide quality service as committed	0.869	0.846	Kim et al. (2004)
20	REL4	Take care of customers regularly and thoughtfully	0.802		
21	REL1	No fraud in billing	0.793		
22	REL3	Flexibility in providing on-demand services	0.649		
Customer loyalty					
23	CLO2	Products of mobile service provider Vinaphone are my first choice	0.927	0.843	Bobâlcă et al. (2012)
24	CLO1	I will continue to use Vinaphone mobile service	0.906		
25	CLO3	I will recommend products of mobile service provider Vinaphone to friends and relatives	0.799		

The Cronbach's Alpha analysis results show that Cronbach's Alpha coefficient of all scales is greater than 0.6. Corrected Item-Total Correlation of all observed variables is greater than 0.3. Therefore, the scales have confidence (Nunnally & Bernstein 1994).

Factor loading of all variables is greater than 0.6. The KMO coefficient is in the range [0.5; first]. Bartlett's test (sig. = 0.000<0.005), factor analysis is suitable. Eigenvalues greater than 1 and extracted variance greater than 50%. So that EFA is validity (Hair et al., 2006).

4.3. Multiple regression analysis

Pearson correlation analysis results show that all independent variables are correlated with the dependent variable Customer loyalty. Proceed to put the variables into the regression model.

Table 4. Multiple regression analysis results

Dependent variable: Customer loyalty	Unstandardized Coefficients		Standardized Coefficients	Expected	t statistics	VIF
	β	Std. Error	β			
Independent variables						
Call quality	0.274	0.043	0.291***	Positive	6.350	1.242
Value-added services	0.173	0.037	0.219***	Positive	4.702	1.281
Customer support Services	0.194	0.040	0.214***	Positive	4.799	1.171
Convenience	0.245	0.043	0.271***	Positive	5.672	1.347
Reliability	0.143	0.042	0.162***	Positive	3.376	1.360
Constant	-0.216	0.229			-0.944	
Testing Indicators						
R^2		0.587				
Adjusted R^2		0.579				
F Change (sig.)			69.371 (0.000)			
Durbin-Watson		2.143				

Note: *The symbols *** represents 1% significance levels, respectively.*

The results of the regression analysis show that the adjusted R^2 coefficient is 0.579 reflects the independent variables that explain 57.9% of the variation of the dependent variable. The remaining 42.1% is explained by out-of-model variables and random error. In order to increase the fit of the model in further studies, it is necessary to add suitable independent variables.

The research explains 57.9% of variation in customer loyalty in the conceptual model. The hypotheses of call quality (β = 0.291; p < 0.01), value-added services (β = 0.219; p < 0.01), customer support services (β = 0.214; p < 0.001), convenience (β = 0.271; p < 0.001), and reliability (β = 0.162; p = 0.01) are statistically significant. Therefore, hypotheses H1, H2, H3, H4, and H5 are supported.

5. Discussion

Research results show that the proposed model explains the influence of service quality factors on customer loyalty of Vinaphone mobile services in Vietnam. The results show that call quality has the strongest influence with the coefficient β = 0.291, convenience has the second effect with the coefficient β = 0.271; value-added services and customer support

services are the next two influencing factors with coefficients β = 0.219 and β = 0.214; Reliability has the final influence with the coefficient β = 0.162. The above factors affect customer loyalty of Vinaphone mobile services and are consistent with previous studies.

Call quality positively impact on customer loyalty (β = 0.291; p < 0.01). This is the factor that has the strongest influence on customer loyalty. This result is similar to the findings of Mokhtar et al. (2011), Kim et al. (2004), Munyanti and Masrom (2018), Truong Dong Loc and Su Quang Thai (2021), Nguyen bach Khoa (2020), and Giao and Ái (2012). However, the influence of Call quality on customer loyalty in each study is different.

Value-added services positively impact on customer loyalty (β = 0.219; p < 0.01). This shows that if Vinaphone has rich value-added services, it will increase customer loyalty. This result is similar to the findings of Mokhtar et al. (2011), Kim et al. (2004), Munyanti and Masrom (2018), Truong Dong Loc and Su Quang Thai (2021), Nguyen bach Khoa (2020), and Giao and Ái (2012).

Customer support services positively impact on customer loyalty (β = 0.214; p < 0.001). This result is similar to the findings of Mokhtar et al. (2011), Kim et al. (2004), Truong Dong Loc and Su Quang Thai (2021), Pham Le Thong & Nguyen Thi Thien Hao (2014), Huynh Minh Nhut (2020), and Nguyen bach Khoa (2020). Therefore, Customer support services also play a very important role for Vinaphone's customer loyalty.

Convenience positively impact on customer loyalty (β = 0.271; p < 0.001). This is the factor with the second strongest influence. If customers perceive the higher convenience, the customer loyalty to Vinaphone will be greater. This result is similar to the findings of Truong Dong Loc and Su Quang Thai (2021) and Nguyen Bach Khoa (2020).

Reliability positively impact on customer loyalty (β = 0.162; p = 0.01). This result is similar

to the findings of Truong Dong Loc and Su Quang Thai (2021), Huynh Minh Nhut (2020), and Giao and Ái (2012). This is the factor with the least influence.

There are five management implications from this research results.

Firstly, for the call quality factor, Vinaphone needs to increase investment in upgrading infrastructure, BTS station coverage infrastructure, expanding domestic internet connection bandwidth capacity through direct peer-to-peer connections, connecting to international internet transfer stations (VNIX), expanding regional and international internet connections. Besides, it is necessary to analyze and find out the technical causes to improve and improve the quality of the network. There must be an investment plan suitable for the number of subscribers. To ensure the quality of calls as well as other related services of mobile telecommunications service provider Vinaphone.

Secondly, for convenience factor, Vinaphone needs to develop a policy on management and administration of distribution channels, ensuring that they operate smoothly and efficiently. Distributing sim cards and scratch cards reasonably, ensuring adequate supply for stores and agents to expand distribution agent channels. Avoid the situation where customers come to ask to buy without having goods to provide. Expand the distribution system in areas with dense population such as universities, colleges, and junior high schools, where the demand for mobile phones is high. In addition, it also focuses on developing the sales channel network in areas with high population density to ensure adequate supply and improve Vinaphone brand recognition for people in these areas. Having a reasonable commission policy to encourage and attract agents and stores.

Decentralize the implementation of procedures for each salesperson to avoid customers having to wait too long and feel inconvenient, and at the same time simplify

procedures when making transactions such as cutting, canceling, registering new, change packages/use forms or suspend services when needed.

Thirdly, for value-added services factor, Vinaphone needs to develop more appropriate value-added services to meet customer needs. Attention should be paid to promising services in the Vietnamese market such as: searching for information based on locations, services linking 4G, 5G with healthcare, education, distance training, reading newspapers, via phone and virtual social network... Applying many preferential programs for subscriber owners, specifically, Vinaphone customers who register to become Vinaphone Plus program members will enjoy accumulating points from usage charges (for postpaid subscribers), the value of the top-up card (for prepaid subscribers) in exchange for gifts in kind or suitable packages and services. The higher the score, the more valuable the gift is. If you are a VIP member, in addition to enjoying great incentives, customers are also provided with many specialized services with special values.

Fourthly, customer services quality is the "key" for this network operator to connect more closely with existing subscribers as well as expand many new subscribers. Vinaphone needs to launch emulation programs "customer services quality". The emulation movement wishes to improve the sense of responsibility of employees in customer care in particular and the company's production and business activities in general, and increase the success rate of customer calls and answer questions performance. In addition, it is necessary to commit to resolving complaints at the receiving place, speeding up the complaint settlement process, and at the same time reducing the number of complaints that have to be transferred to the back line. Request high service attitude, best to each employee. Vinaphone's friendliness and smile, bowing culture will be the most permanent image that each customer feels when coming to Vinaphone's transaction points.

Lastly, Vinaphone needs to fulfill its commitment to customers about services according to the company's service quality statement. Strengthen public relations to build trust with customers. Specifically, it is necessary to promote the promotion of Vinaphone's image through the organization of sponsorship activities for major cultural and sports events. Such as sponsoring music programs, sports tournaments, social activities such as contributing to building houses of gratitude, sponsoring scholarship funds, taking care of heroic Vietnamese mothers... Setting up a channel share information with newspapers, radio... to avoid being misinformed, reducing trust from customers. Maintaining and enhancing customer care activities because trust cannot be achieved overnight but is a cumulative process. Not only maintaining the current quality level, Vinaphone must regularly implement activities to improve the quality of customer care services to gain more and more trust from customers at a higher level.

6. Conclusion

The research studies the service quality factors affecting the loyalty of customers using Vinaphone mobile services in Vietnam. Based on the survey results of 250 customers who have participated in using Vinaphone's mobile services, the collected data is processed by the SPSS 25.0 software, including descriptive statistics, and the reliability test of the scale measured by Cronbach's Alpha method, exploratory factor analysis (EFA), analysis of multiple regression models. The research results after identified 05 factors of service quality that affect customer loyalty in descending order include call quality, convenience, value-added services, customer support services, and reliability.

The study has shown the results to achieve the set objectives, but there are still certain limitations, such as: (1) Non-probability sampling method, convenient sampling combined with soft development, should be representative not high, (2) There are many

factors of service quality that affect customer loyalty to use the service that the regression model has not mentioned. Further studies can be carried out in other networks to expand the application scope of the research model as well as compare the differences between different mobile networks.

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