RESEARCH ON APPLICATION OF SERVPERF MODEL IN ASSESSING VIETTEL'S MOBILE INTERNET SERVICE QUALITY IN DANANG CITY

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Abstract - Nowadays, telecommunication industry has grown rapidly in Vietnam market. The popularity of smart phones and tablets leads to the increase in users of Internet mobile services. In the race of profit, telecommunications providers in Vietnam have been improving service quality to satisfy current customers and attract potential customers. Despite being one of the three largest telecommunication providers with significant investment in this industry, Viettel's quality of Internet mobile services has not really met customer expectations. This study applies the SERVPERF model to assess the Internet mobile service of Viettel and figures out the existing problems of this provider in Danang market. Then the author gives recommendations in terms of staff, convenience, and responsiveness to improve the quality of Viettel's Internet mobile services.

Key words - telecommunications providers; Internet mobile services; SERVPERF model; service quality; customer satisfaction.

1. Problem Statement

Along with many factors, Mobile Internet users are really not satisfied with the service quality. In spite of large investment in 3G technology, Viettel Corporation has not yet earned customer satisfaction.Kotler defined customer satisfaction as the extent to which a product's perceived performance matches a buyer's expectations [9]. Therefore, Viettel need to find effective measures to develop services and meet customer expectations. To assess the service quality of Viettel Mobile Internet, we have to interview and survey users, then analyze database through SPSS software to find out the relationship of customer satisfactions and service quality, based on theoretical basis and suitable analysis model. These analysis models such as SERVQUALI/SERVPERF model [3] or Parasurman [1] is one of the effective approaches to measure the service quality, but it is quite hard to learn and very time-consuming to implement assessment [12].

According to GSMA Intelligence [3], there had been by the end of year 2013 about 123.7 million mobile connections in Vietnam, while the total population in Vietnam is 92.1 million. By the end of year 2013, the number of Mobile Internet users was 24.74 million (occupying 20% mobile connections), an increase of 36.83% year-on-year. These statistics indicate that the Mobile Internet is fast becoming an important part of daily life in Vietnam.

Nowadays, mobile Internet is a potential and competitive market. To have stable foothold and improve service quality, each company always has to set up reasonable strategies, and scales to capture the trend, and overcome weaknesses, and understand feedbacks from customers [2]. Therefore, understanding consumer behavior is an important factor in the process of building quality scale [4] of Mobile Internet services in Da Nang City. Research objectives include:

- Exploring components of the service quality.

- Assessing the quality of Viettel's Mobile Internet service Da Nang City at present by applying SERVPERF model.

- Understanding customers' behavior in using Viettel's Mobile Internet service through customers' feedbacks.

- Finding out the measures to overcome weaknesses and improve Mobile Internet service quality of Viettel in Da Nang City.

2. Research methodology

2.1. Data collection methods

Documentary review: Secondary data, such as books, articles, academic journals, electronic database or theses are good materials for reference.

Primary Data: Based on the quantitative method, we use questionnaire to collect quantitative data by survey links or hard copy questionnaires to send out to Viettel's users of mobile Internet services. Sample size is fixed at 300.

2.2. Literature Review

2.2.1. Service

Services are economic activities offered by one party to another, most commonly employing time-based performances to bring about desired results in recipients themselves or in objects or other assets for which purchasers have responsibility [6]. In exchange for their money, time, and effort, service customers expect to obtain value from access to goods, labor, professional skills, facilities, networks, and systems; but they do not normally take ownership of any of the physical elements involved [7].

2.2.2. Nature of service

Intangibility:

Services differ from products in the way that they cannot be touched, felt, seen or tasted in the same way products can [9]. Unlike products, services are performed experiences and not objects. The lack of tangible attributes causes the services to be harder to evaluate than products [8].

Simultaneously:

The process of production and consumption of services occur simultaneously. Different from physical production, production of services is unavailable in storage to deliver then to consumers. The manufacturing process occurs simultaneously with consumption of services [10].

Heterogeneity:

Quality of service usually fluctuates in a wide range, depending on the circumstances that create services (for

example: suppliers, time and place to supply service). Consumers can evaluate a tangible product through product design, the color of the packaging etc and can touch, smell, see, or taste the product before purchase [5].

Perishability:

Perishability suggests that services, unlike products, cannot be stored and saved for a later occasion. Consumption of services is limited by time [8].

2.2.3. SERVPERF model

In 1992, Cronin and Taylor worked together to present a new model which can replace SERVQUAL model. SERVPERF was developed by their efforts to get over the "Perceptions – minus – Expectations". Besides the wide range of propositional theoretical concepts, Cronin and Taylor also provided the variety of realistic evidences in four industries (namely banking, pest control, dry cleaning and fast food) to reveal the superiority of SERVPERF in comparison with SERVQUAL. SERVPERF model uses only 22 questions, which ask about the customer perceptions in five dimensions to measure service quality [11].

2.2.4. Service quality and customer satisfaction
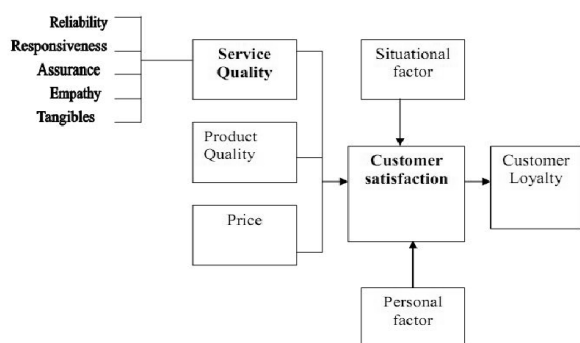
Figure 1. *Customer perceptions of quality and customer satisfaction [11]*

Figure 1 shows the relationship between customer satisfaction and service quality. The author has shown a situation where service quality is a focused evaluation which reflects the customer's perception of reliability, assurance, responsiveness, empathy, and Tangibility while customer satisfaction is more comprehensive and it is affected by perceptions of service quality, product quality, price, situational factors and personal factors [11].

2.2.5. Conceptual framework
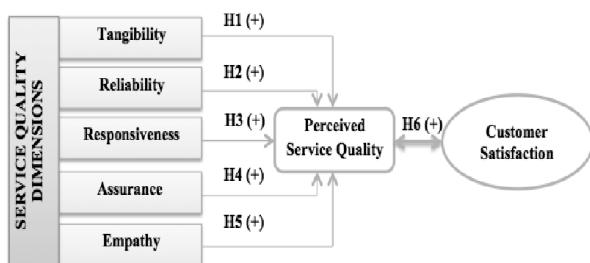
Figure 2. *Conceptual framework*

Figure 2 shows the following hypotheses:

H1: Tangibility has positive relationship with perceived service quality

H2: Reliability has positive relationship with perceived service quality

H3: Responsiveness has positive relationship with perceived service quality

H4: Assurance has positive relationship with perceived service quality

H5: Empathy has positive relationship with perceived service quality

H6: Customer satisfaction has a positive relationship with service quality.

3. Data Analysis & Findings

3.1. Descriptive Statistics

3.1.1. Gender

In this research, subjects surveyed mostly under 20 years old and from 25 to 35 years old account 53.7%, and 35.3% respectively. These two kinds of subjects are of great influence on the research.

3.1.2. Frequencies of Usage

Based on the analysis results, most of the respondents say that the use of Mobile Internet Service is necessary and almost everyone uses Internet every day. Only 10% sometimes use it and 0.3% never use it.

3.2. Overall Satisfaction:

Conditions to ensure reliability:

- Cronbach Alpha ≥ 0.6
- Corrected Item - Total Correlation > 0.3

The measure taken is principal component because satisfaction scale is single direction variable. The scale will be accepted when:

- $0.5 \leq KMO \leq 1$
- Variance ≥ 50%
- Eigenvalues > 1

3.2.1. Reliability of data – Cronbach Alpha test

Table 1. *Cronbach Alpha test*

Cronbach Alpha: 0.750	
N: 4	Corrected Item - Total Correlation
SAT1	0.51
SAT2	0.613
SAT3	0.506
SAT4	0.567

From Table 1, Cronbach Alpha of overall satisfaction (SAT) scale is 0.750 > 0.6, and no variable that is smaller than 0.3 in Corrected Item-Total Correlation, and there are also no variables in Cronbach's Alpha if Item Deleted bigger than Cronbach Alpha (0.750). Therefore, no variable is eliminated and overall satisfaction scale is enough conditions to ensure reliability [11].

3.2.2. Exploratory factor analysis

Table 2 shows that four variables of overall satisfaction are extracted with one component with Eigenvalue = 2.305 > 1; % of Variance = 57.628% > 50%; and KMO = 0.759 is in the range of 0.5 and 1. If all variables fully meet the

conditions, overall satisfaction scale is accepted.

Table 2. *Component Matrix*

Component Matrix	
	Component
SAT1	0.726
SAT2	0.808
SAT3	0.726
SAT4	0.774
Eigenvalue	2.305
% of Variance	57.628%
KMO	0.759

3.2.3. SERVPERF model evaluation

According to literature review, SERVPERF model is divided into five dimensions. This part aims to test these dimensions of SERVPERF model with collected data with such methods as: Cronbach Alpha, Exploratory factor analysis (EFA), Correlation, Regression, T-Test, and One way-ANOVA test.

The result indicates that three dimensions, namely staff, convenience, responsiveness have total correlation and Cronbach's Alpha is acceptable. With assurance dimension, Cronbach's Alpha coefficient is <0.6 and it can not delete the variable to increase reliability coefficient (because reliability analysis model requires the number of variables over or equal 3, and if we delete the variable, it will not be accepted) thus assurance dimension is rejected from research model.

Therefore, SERVPERF model is changed about the dimensions in quality of services after it is used to evaluate the service quality of Mobile Internet on cell phone from five dimensions to three dimensions and it also changes the name, the concept, the notation. The new model includes three dimensions: Staff, Convenience, and Responsiveness.

3.2.4. Linear regression analysis

Each dimension has several observed variables; therefore we need to calculate the mean of observed variables in each dimension group before testing the relationships. Through factor analysis and Cronbach Alpha testing, research model are calibrated from five dimensions to three dimensions. The new model includes three dimensions renamed as Staff, Convenience, and Responsiveness. Therefore, we calculate the mean of calibrated variables by the Transform/Compute command. It can also be used to collapse several variables that measure the same concept into a single variable, thus increasing the reliability of the measure. To calculate the mean score for each dimension, we type these formulas into Numeric Expression box as shown in Table 3.

Table 3. *Average values of target variables*

Target Variables	Numeric Expression
STAFF	MEAN(RP7,AS4,EP1,EP2,EP3)
CONVENIENCE	MEAN(TG2, TG3, TG4, TG5, RP1)
RESPONSIVENESS	MEAN(RP2,RP5,RP6,RL1,RL2,RL3)

To test the suitability of the research model, the correlation matrix between dependent variables - Satisfaction and independent variables into four Servperf dimensions are set.

Table 4. *Correlation Matrix*

	Staff	Convenience	Responsiveness	Satisfaction
Staff	1			
Convenience	.297**	1		
Responsiveness	.377**	.250**	1	
Satisfaction	.424**	.347**	.460**	1

According to Table 4, if significant level of 1% is used, then independent variables such as Staff, Convenience and Responsiveness are significantly correlated with dependent variables – customer satisfaction.

Satisfaction correlates closely with the 3 dimensions of SERVPERF and 3 dimensions are also closely correlated with each other. Therefore, 3 dimensions are also independent variables in the next regression model. Due to the correlation of these dimensions, testing multicollinearity is conducted.

Table 5. *Regression Analysis*

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.564	0.318	0.311	0.55779

Coefficients					
	Unstandardized Coefficients		*Standardized Coefficients*		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	0.919	0.231		3.982	0.000
Staff	0.237	0.051	0.246	4.619	0.000
Convenience	0.187	0.049	0.194	3.816	0.000
Responsiveness	0.356	0.059	0.319	6.072	0.000

According to Table 5, we have three independent variables with significant level less than 0.05, namely Staff (0.237), Convenience (0.187), and Responsiveness (0.356).

Then the following multiple regression model characteristics for theoretical models are consistent with market data:

Satisfaction = 0.237×Staff + 0.187×Convenience

+ 0.356×Responsiveness + 0.919 ± 0.55779

From these results, we should conclude that the higher quality of staff are related to higher satisfaction, that higher convenience is associated with higher satisfaction, and responsiveness is strongly related to satisfaction.

4. Findings

4.1. Key finding 1: Exploring the dimensions of the service quality – SERVPERF model

According to the SERVPERF model, there are 22 questions used to measure the service quality and they are based on the users' perception alone. The questions cover the customer's assessment through 5 dimensions: Tangibility, Assurance, Responsiveness, Reliability and

Empathy.

The reason why SERVPERF model is used to measure Viettel's Mobile Internet service is its simplicity. Generally, SERVQUAL uses 44 questions in both two aspects (customer's expectation and customer's perception) to measure the service quality and then figure out the service quality by using the function:

SERVICE QUALITY = PERCEPTION – EXPECTATION

In terms of SERVPERF, only the customer's perception is measured and the service quality is calculated more easily,so it prevents the insipidity of customers when they do the questionnaire.

SERVICE QUALITY = PERCEPTION

4.2. Key finding 2: Assessing the quality of Viettel's Mobile Internet service Da Nang City at present by applying SERVPERF model

In the process of applying the SERVPERF model, with the combination of previous studies about service quality and preliminary studies, 22 variables of SERVPERF model are formed. After testing the reliability of the scale by Cronbach Alpha at the first time, 19 observed variables are retained.

Secondly, after doing EFA analysis, SERVPERF model had a change from five dimensions to 4 dimensions. Through the second Cronbach Alpha test, SERVPERF model only retains three dimensions with high reliability. The dimensions are calibrated and renamed as follows:

Staff expresses communication skills, expertise, and empathy to gain trust from the customers.

Convenience shows mobility and convenience for customers including factors related to facilities and services.

Serving is the knowledge and style of service personnel making customers trust (this dimension was eliminated after the second Cronbach Alpha test).

Responsiveness shows the ability to meet customers' needs of service.

With the result, the conclusions will be conducted as follows:

Firstly, we can know the dimensions of service quality and the impact of these components on customer satisfaction.

Secondly, because many different subjects use this service, assessing the quality of service by the views of these objects is obvious.

Thirdly, the evaluation by the explored structure does not reject or reduce sense of theory as well as SERVPERF model because the characteristics of observed variables the old dimensions still exist in the new dimensions.

4.3. Key finding 3: Understanding customers' behaviors in using Viettel's Mobile Internet service through customers' feedbacks

Convenience is the dimension that satisfy customers most, and the next is Staff, but Responsiveness is the dimension which has the lowest satisfaction degree. Testing deeper in customer satisfaction with such factors as income, gender, and education, we get some conclusions as follows:

There are differences in Responsiveness evaluation through income. With people whose income is high, their satisfaction in responsiveness will be low.

There are differences in Staff evaluation through Education. We can draw the conclusion that customers with high level of education will evaluate service quality strictly.

There is no difference in service quality assessing through gender. All customers in two genders have equivalent satisfaction with Mobile Internet Service that they are using.

5. Conclusions

In conclusion, this research explores important dimensions in service quality assessing, thus finding out suitable model for this study, especially in Mobile Internet service industry. It affirms that service quality can be assessed from the view of customer satisfaction because of their relationship. Under careful consideration, all collected data are screened, processed, and analyzed to clarify three main key findings of the research including: exploring dimensions of service quality, testing the suitability of SERVPERF model, and understanding customers' behavior through their feedback. Then at last, some recommendations re presented to enhance the service quality of Viettel's Mobile Internet service in Da Nang City, and in Viet Nam generally.

However, this study also reveals some limitations such as: financial difficulty, and academic knowledge barriers. In addition, the project has some certain areas which are not addressed completely.

6. Recommendations

6.1. Recommendation 1: To enhance the training for staff to be more aware of the relationship between service quality and customer satisfaction

Enhancing the awareness of staff about customer service is very important. Viettel should organize training courses for staff of customer service department to help them increase their knowledge and skill to serve customers. For example, each month, we invite a speaker to guide the method to serve customers. Company should also usually collect feedbacks from customers through hotline, email or survey.

Selecting suitable lecturers and documents to train staff is the second important point. Viettel should combine theory and practicability on training programs; it helps the staff to orientate the proper way on job. At first, they can begin with small groups before expanding model. Besides, they should improve staff's skill of using computer, computer software as well as English.

6.2. Recommendation 2: To increase the level of satisfaction about Responsiveness dimension, company should add new features

Viettel needs to upgrade their technology to improve service quality. They should apply the new feature: DC-HSDPA (Dual Cell high-speed downlink packet

access) to increase the speed of download. HSDPA is a product of 3G technology; it allows the network on UMTS system to transmit data faster. HSDPA technology has its limits and to enhance its issues, DC-HSDPA is introduced. This new feature will help to increase the current rate six times It has good effect on customer satisfaction through the efforts.

In the competitors' website, the fee for each package is clearly presented; however, Viettel skip this step.This will confuse customers when they are reading and using the service. Therefore, Viettel needs to be careful on designing and announcing information to customers.

6.3. Recommendation 3: To improve the interface of Viettel to attract customers' attention

The company should enhance the interface of website, layout the category, contents carefully to attract customers. Besides, they should update information regularly to help customers capture the new information. The information in website at this time is outdated, and customers find it very difficult to update news, event programs, or tariff.

Viettel should use English language on the website. Now, they only use Vietnamese language and if they want to expand the market with potential customers, they have to do that. The foreigner can know the news or the feature of Viettel service when they visit the website. And through that, they will be aware of Viettel service and brand.

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