



RESEARCH ARTICLE

EFFECTS OF SERVICE QUALITY ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY: THE CASE OF BROADBAND INTERNET SERVICES IN VIET NAM

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ABSTRACT

The techniques of measuring service quality and its dimensions have become a major area in marketing. The purpose of this research paper has been to examine the impacts of quality service on customer satisfaction and customer loyalty which using internet broadband services in Viet Nam. This paper used qualitative research conducted through discussions with 30 consumers, and quantitative research conducted through direct interviews with 548 consumers. The results have indicated that reliability, responsiveness, assurance, tangibles, and empathy are influential factors on customer satisfaction, whereas, reliability, responsiveness, assurance, and tangibles have insignificant impact on customer loyalty.

INTRODUCTION

Today globalization and liberalization are affecting economies of not only developing but also developed countries. The focus areas for organizations are also changing from profit maximization to maximizing profits through increased customer satisfaction. The pressures of competition are forcing the organizations to not only look on the processes but also on the way they are delivered, mainly from the internet service. In Vietnam, Broadband internet services were provided by Vietnam Posts and Telecommunications Group (VNPT) at first in Ho Chi Minh City and Ha Noi in 2003. It was difficult to be install this service for a long time because of lack of competitors, so customers had rarely cancelled their service. In recent years, there has been lots of domestic competitors such as FPT Telecommunication Joint Stock Company, Viettel Telecom company. In 2016, VNPT's market share which became the largest market share of broadband internet service was at 44.8%, Viettel⁷ market share (35.7%) and FPT's market share (19.2%). Broadband internet service is different from traditional service, which is based on interactive information flow between customers and service providers.

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Broadband internet service quality has been regarded as having the potential not only to deliver strategic benefits for customers, but also to enhance operational efficiency and profitability. Therefore, it is necessary to research certain factors affecting on customer satisfaction (Wang *et al.* , 2004; Cheng *et al.* , 2008; Tsou and Liao, 2010; Apostolos *et al.* , 2014; Quach *et al.* , 2016) and their loyalty (Monal and Girish, 2012; Rizka and Widji, 2013) in order to retain available customers and attract potential customers. Service quality has strong impacts on customer satisfaction and their loyalty. Improving broadband internet service quality to satisfy customers is becoming a challenging issue. There are a range of studies on the dimensions, measures and attributes of service quality. The purpose of this paper is to uncover and interpret the current researches in the dimensions of broadband internet service quality of VNPT in Vietnam, and propose a theoretical scale to measure broadband internet service quality.

Literature Review

According to Gronroos (1984), author identified three components of service quality as follows:

- Technical quality is the quality of what consumer actually receives as a result of customer interaction with the service firm and is important to customer and to customer evaluation of the quality of service.

- Functional quality is how customer gets the technical outcome. This is important to him and to customer views of service customer has received.
- Image is very important to service firms and this can be expected to built up mainly by technical and functional quality of service including the other factors such as tradition, ideology, word of mouth, pricing and public relations.

The SERVQUAL scale was also developed by Parasuraman *et al* . (1985), aiming at providing a generic instrument for measuring service quality across a broad range of service categories [2, 3]. The widely used SERVQUAL instrument is composed of five dimensions, which are based on the original ten dimensions developed by them [2, 3]. The five dimensions of SERVQUAL are:

- **Tangibles:** the appearance of physical facilities, equipment, personnel and communication materials;
- **Reliability:** the ability to perform the promised service dependably and accurately;
- **Responsiveness:** The willingness to help customers and provide prompt services;
- **Assurance:** the knowledge and courtesy of employees and their ability to convey trust and confidence;
- **Empathy:** care and individualized attention provided to customers.

In this study, the authors conducted a study on broadband internet service of VNPT based on customer satisfaction such as reliability, responsiveness, assurance, tangibles, and empathy. In addition, the authors also studied on broadband internet service of VNPT based on customer loyalty as reliability, responsiveness, assurance, and tangibles. This study can help to identify which are main factors affecting on customer satisfaction and their loyalty based on Parasuraman *et al* model (1985, 1988).

Service quality and its components

Parasuraman *et al* . (1985) proposed that service quality is a function of the differences between expectation and performance along the quality dimensions. Therefore, broadband internet service is also measured on customers's perception about service quality of VNPT compared with their expectations.

According to Parasuraman *et al* (1988), there were five main dimensions of service quality as followings:

- **Tangibles:** The appearance of physical facilities, equipment, personnel and communication materials. So, tangibles of VNPT consist of technical instruments, office space, coworkers' uniform, etc.
- **Reliability:** the ability to perform the promised service dependably and accurately. Therefore, customer's reliability based on broadband internet service of VNPT are all things which VNPT promised to their customers such as giving their help to their customer if they need it, assuring that their service quality always reliable and maintainable, accurate delivery service, complete order service, company being truthful about its offering, the online service always correct, keeping service and

promotion promise, accurate online booking records and VNPT website always available.

- **Responsiveness:** The willingness to help customers and provide prompt services. Responsiveness of VNPT always support to their customers adequate contact information and performance, prompt responses to customers, timely responses to customers, adequate response time, and quickly solve problems.
- **Assurance:** the knowledge and courtesy of employees and their ability to convey trust and confidence. Customer's assurance based on broadband internet service of VNPT are all things which VNPT assure their customer of responding to any customer inquiry in a polite and courteous manner, protecting the personal data of customers, terms on payment and delivery and good reputation.
- **Empathy:** care and individualized attention provided to customers such as adequate contacts, address complaints friendly and consistently respectful towards their customers. Empathy of VNPT always take care of both their customer and potential customer by companies' employee. In addition, company also understand deeply things which their customers pay attention to service quality.

Satisfaction

Another important factor of this study is customer satisfaction. Most businesses has been focused on consumer satisfaction as a way to improve customer loyalty (Tsou and Liao, 2010) and thus profitability (Tsou and Liao, 2010; Kim *et al* , 2004).

Customer satisfaction is an affective state in the presence of an emotional reaction regarding a service experience (Bachelet, 1995). It also is the result of a subjective assessment of the performance perception of service attributes (Spreng *et al* , 1996). In addition, it is the result of a subjective evaluation of the information used when choosing a product or the result of a subjective relation between expectations/desires and the perceived performance; the result of a subjective relation between desires and the perceived performance (Oliver, 1997 and Castaneda *et al* , 2009). Service quality and satisfaction are two differential concepts, however, they have in significant relation to research on service sector (Parasuraman *et al* , 1988). The results of Cronin and Taylor (1992), Parasuraman *et al* (1994), Spreng and Mackoy (1996), Dabholkar *et al* (2000) indicated customer satisfaction by reason of service quality. In addition, the study of Cheng *et al* (2008), Tsou and Liao (2010) Apostolos *et al* (2014), Quach *et al* (2016) also showed that Internet service quality was one of the most important elements affecting customer satisfaction in telecommunications industry.

Therefore, the authors have hypothesized H1,H2, H3, H4, and H5 as follows:

- H1:**Reliability will increase or decrease customer's satisfaction (expectation +)
- H2:** Tangibles will increase or decrease customer's satisfaction (expectation +)
- H3:** Empathy will increase or decrease customer's satisfaction (expectation +)
- H4:** Assurance will increase or decrease customer's satisfaction (expectation +)

H5: Responsiveness will increase or decrease customer’s satisfaction (expectation +)

Customer loyalty

Oliver (1999) defines brand loyalty as “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.”

There are two main approaches to customer loyalty (Kabiraj and Shanmugan, 2011):

- (i) The first approach views customer loyalty as behavior which is operationalised in terms of repeat purchase, or purchase frequency, or share purchase;
- (ii) The second approach views customer loyalty as attitude and operationalised this as preference, commitment, buying intention, and recommendation willingness. In this study, the authors consider customer loyalty according to Oliver (1999) defined loyalty as 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. In other words, service quality has significant important role in relation to customer loyalty (Monal and Girish, 2012). Studies of Monal and Girish (2012), Rizka and Widji (2013) show that quality service have been identified as having a significant influence on customer loyalty.

H8: Empathy will increase or decrease customer loyalty (expectation +)

H9: Assurance will increase or decrease customer loyalty (expectation +)

H10: Responsiveness will increase or decrease customer loyalty (expectation +)

H11: Customer satisfaction will affect customer loyalty (expectation +)

MATERIALS AND METHODS

This study has been combined qualitative and quantitative research methods. This paper used qualitative research conducted through discussions with 30 consumers of VNPT, and quantitative research conducted through direct interviews with 548 consumers using Internet Broadband Network Services in Vietnam from 01/2017 to 06/2017 by convenient sampling using a detailed questionnaire to test model and research hypotheses. Data processing techniques were collected data was evaluated by means of Cronbach's Alpha reliability analysis, EFA, CFA, and SEM to test and verify suggested models and hypotheses.

RESULTS AND DISCUSSIONS

Description of research sample With 600 respondents, 52 people were declined because of too many inappropriate respondents. Data is used by SPSS software 20.0 with 548 validity respondents (included 91.3% in all respondents).

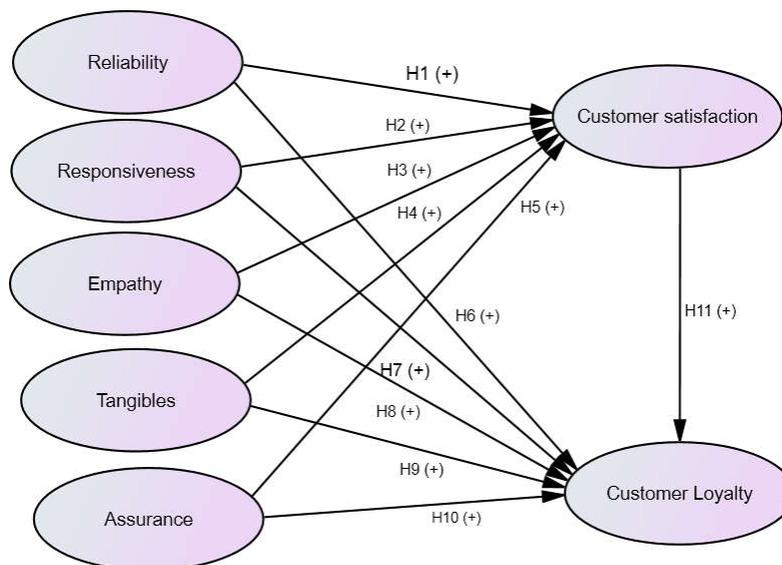


Figure 1. Models and hypotheses proposed by authors

Addition, customer satisfaction and customer loyalty are very closely related (Kim *et al.*, 2004). results of Kim *et al.* (2004), Lin and Wang (2006), Cheng *et al.* (2008), Tsou and Liao (2010), Su *et al.* (2011), Apostolos *et al.*, (2014), Quach and *et al.*, (2016) show that customer satisfaction have impact on customer loyalty. Therefore, the authors have hypothesized H6, H7, H8, H9, H10, and H11 as follows:

- H6:** Reliability will increase or decrease customer loyalty (expectation +)
- H7:** Tangibles will increase or decrease customer loyalty (expectation +)

Among 548 respondents, there are 217 (39.6%) females, 331 (60.4%) males and 491 respondents (89.6%) individuals, 57 respondents (10.4%) companies among 548 respondents.

Results analysis of scales’ reliability

The results presented in Table No. 1 shows that in the 34 observation variables has been used to measure research concepts in the reliability analysis of the scale via the Cronbach's Alpha coefficient (Cronbach’s Alpha coefficient > 0.6 and correlation coefficient – total > 0.3, Nunnally and Burnstein, 1994).

Table 1. Results of the reliability analysis of research concepts

Tangibles: Cronbach's Alpha = 0.804	
TAN1:	VNPT has modern office equipment
TAN2:	spacious headquarters and office can be trustful in customers
TAN3:	neat and nice VNPT staffs
TAN4:	VNPT's cable network always meets the requirements of providing good broadband internet service
Reliability: Cronbach's Alpha = 0.864	
REL1:	VNPT promises to do something such as service install, line repair, device warranty at a specific time, that will be done
REL2:	customers have any trouble accessing the Internet, VNPT always responds to timely
REL3:	VNPT's broadband Internet service is stable and reliable
REL4:	VNPT provides broadband Internet service at certain time as being promised
REL5:	VNPT informs customers when the service will be performed
Responsiveness: Cronbach's Alpha = 0.844	
RES1:	VNPT staff can quickly respond to your requests in case of moving or repairing the cable, changing the information on the board, etc
RES2:	VNPT staff always have your request when you need any help
RES3:	VNPT staff never feel so busy not to suit customer needs
RES4:	Customers always receive the help from VNPT staff
Assurance: Cronbach's Alpha = 0.838	
ASS1:	Communication style, behavior of VNPT employees increasingly create trust in their customers.
ASS2:	Customers feel secure when using VNPT's broadband Internet service
ASS3:	The members of staff are always polite and courteous to their customers
ASS4:	Staff members have sufficient knowledge and expertise to respond
Empathy Cronbach's Alpha = 0.871	
EMP1:	VNPT staff members pay attention to show interest to each customer
EMP2:	VNPT staff members pay attention to show interest to each customer
EMP3:	VNPT staff members understand the special needs of each customers and their business
EMP4:	VNPT staff members pay attention to issues that you or your business
EMP5:	VNPT staff always have convenient time to serve your needs or your business
Customer satisfaction SAT: Cronbach's Alpha = 0.841	
SAT1:	I am satisfied using VNPT's broadband Internet service
SAT2:	I am satisfied with management ways and VNPT's broadband Internet service
SAT3:	I am satisfied with the service and working attitude of VNPT staff
SAT4:	I am satisfied with VNPT's broadband management and VNPT's procedure
Customer Loyalty LO: Cronbach's Alpha = 0.873	
LO1:	I always think of VNPT's broadband Internet service whenever needed
LO2:	As the cost of using the service has changed slightly, I still choose VNPT's broadband internet service
LO3:	If I have a choice, I still choose VNPT's broadband internet service
LO4:	I will introduce VNPT's broadband Internet service to other users

(Source: author's survey data, 2017)

Table 2. EFA results of factors affecting service quality

Variables	Component				
	1	2	3	4	5
EMP4	.888				
EMP1	.871				
EMP2	.773				
EMP3	.743				
EMP5	.694				
REL3		.809			
REL5		.809			
REL2		.806			
REL1		.767			
REL4		.744			
RES4			.822		
RES3			.820		
RES2			.802		
RES1			.795		
ASS2				.816	
ASS4				.810	
ASS3				.805	
ASS1				.740	
TAN4					.813
TAN2					.795
TAN3					.764
TAN1					.746
Eigenvalue	3.370	3.261	2.773	2.695	2.550
% of variance	15.318	14.823	12.603	12.251	11.590
Cumulative %	15.318	30.142	42.745	54.996	66.586
KMO			0.842		
Bartlett's Test	Chi square		5960.916		
	df		231		
	Sig.		0,000		

(Source: Authors' survey data, 2017)

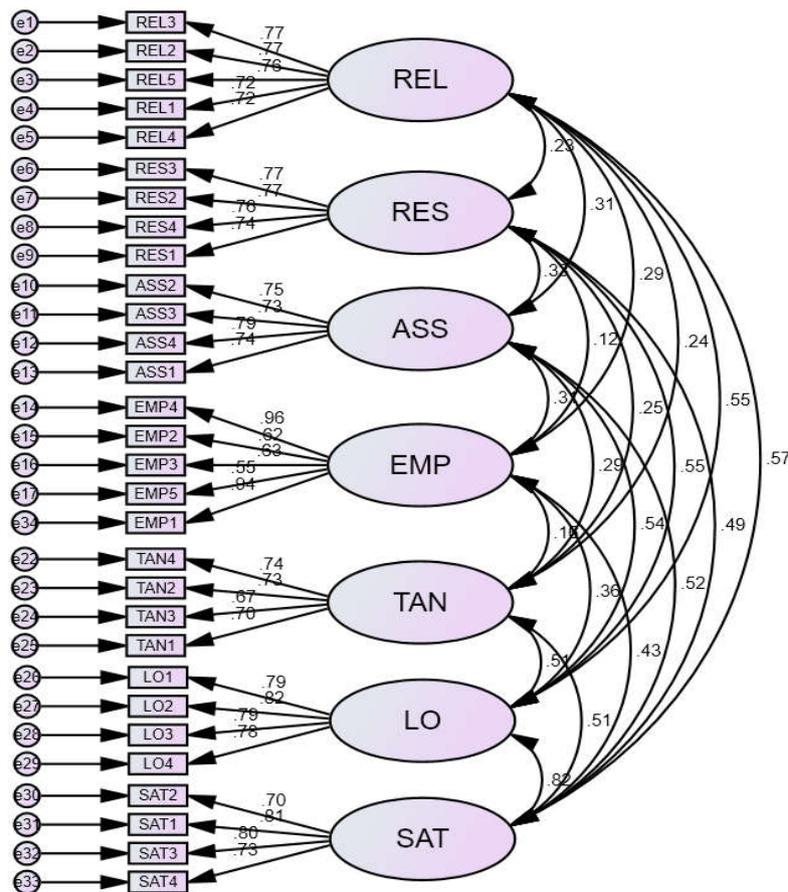
Table 3. EFA results of customer satisfaction

Variables	Component	
	1	
SAT1		.861
SAT3		.853
SAT4		.791
SAT2		.790
Eigenvalue		2.719
% of variance		67.965
KMO		0.812
Bartlett's Test	Chi square	872.749
	df	6
	Sig.	0.000

(Source: Authors' survey data, 2017)

Table 4. EFA results of customer loyalty

Variables	Component	
	1	
LO2		.869
LO4		.850
LO1		.843
LO3		.840
Eigenvalue		2.895
% of variance		72.369
KMO		0.834
Bartlett's Test	Chi square	1059.329
	df	6
	Sig.	0.000



Chi-square=824.120;df=384;CMIN/df=2.146;p=.000;
TLI=.942;CFI=.949;RMSEA=.046

(Source: Authors' survey data, 2017)

Notes: $\chi^2/ d.f.$ ratio < 5 (Schumacker and Lomax, 2004), TLI > 0.90 (Hair et al, 2006), CFI > 0.90 (Hair et al, 2006), RMSEA < 0.07 (Hair et al, 2006), p - value > 0.05 (Hair et al, 2006)

Figure 2. Results of study test

Table 5. CFA results of composite reliability and variance extracted

Concept	Abbreviation	Observed variables	P _c	P _{vc}
Reliability	REL	5	0.865	0.561
Assurance	ASS	4	0.840	0.567
Responsiveness	RES	4	0.845	0.577
Tangibles	TAN	4	0.805	0.508
Empathy	EMP	4	0.867	0.578
Customer Loyalty	LO	4	0.873	0.632
Customer satisfaction	SAT	4	0.845	0.578

(Source: Authors' survey data, 2017)

Table 6. CFA results of unidimensionality, convergent validity and discriminant validity

			Estimate	S.E.	C.R.	P	Label
REL	<->	RES	.069	.015	4.462	***	
REL	<->	ASS	.089	.016	5.651	***	
REL	<->	EMP	.119	.020	5.819	***	
REL	<->	TAN	.072	.016	4.476	***	
REL	<->	LO	.177	.019	9.133	***	
REL	<->	SAT	.172	.019	8.889	***	
RES	<->	ASS	.098	.016	6.024	***	
RES	<->	EMP	.048	.020	2.451	.014	
RES	<->	TAN	.075	.016	4.582	***	
RES	<->	LO	.176	.020	8.992	***	
RES	<->	SAT	.150	.019	8.069	***	
ASS	<->	EMP	.126	.021	6.095	***	
ASS	<->	TAN	.088	.017	5.284	***	
ASS	<->	LO	.172	.019	8.842	***	
ASS	<->	SAT	.158	.019	8.339	***	
EMP	<->	TAN	.066	.021	3.199	.001	
EMP	<->	LO	.163	.023	7.155	***	
EMP	<->	SAT	.184	.023	7.978	***	
TAN	<->	LO	.168	.020	8.380	***	
TAN	<->	SAT	.158	.020	8.048	***	
LO	<->	SAT	.273	.025	10.958	***	

(Source: Authors' survey data, 2017)

The results of EFA

The results of EFA presented in Table No.2 and Table No.3 show suggested scales have been satisfied the standard. EFA factors affecting the export performance are respectively extracted into 05 factors corresponding to observe variables from 05 concepts with a total obtained variance of 66.586% at the Eigenvalue of 2.550. EFA satisfaction factor is extracted into 1 factor with an obtained variance of 67.965 % at the Eigenvalue of 2.719. The EFA results are analyzed by Varimax rotation method.

Results of CFA

The results of composite reliability (Pc) and variance extracted (Pvc). The CFA results presented in Table No.5 show that all scales meet the requirements for reliability, average variance extracted, convergent validity, discriminant validity and unidirectional.

The results of the testing model of customer satisfaction

The results of the testing model are unidimensionality, convergent validity and discriminant validity. The results of the testing model presented in Figure No.2 show that the model has Chi squared value as 824.120; Df at 384; Cmin/df at 2.146 with p-value at 0.000 (<0.05) was not appropriate due to the size of the sample (only 548 respondents surveyed). However, other appropriate measures such as TLI = 0.942; CFI = 0.949 and RMSEA = 0.046 are consistent.

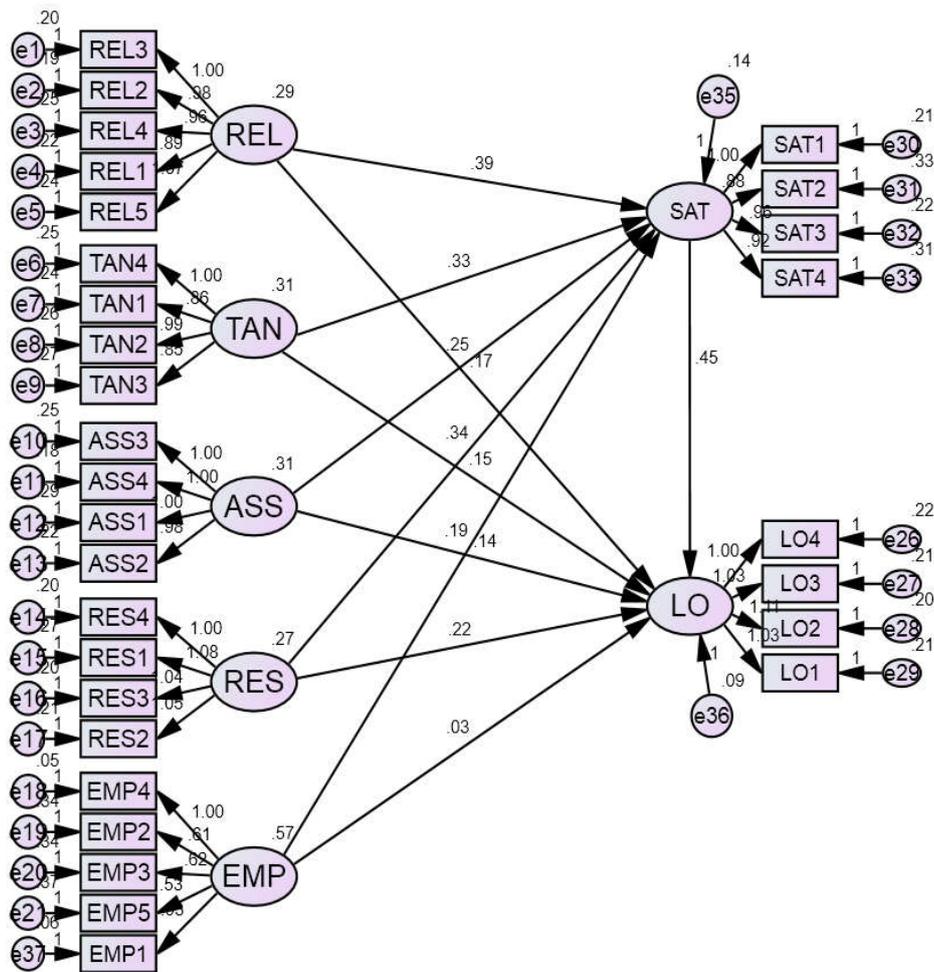
Thus, it is still possible to conclude that this model is consistent with data collected from the market. In addition, the correlation coefficients together with the standard deviations show that they are different from one. In other words, the concepts of discriminative research. The error of the measurement variables is not correlated, the weights (λ_i) are greater than 0.5 and statistically significant. Thus, the observed variables are unidimensionality, convergent validity and discriminant validity.

The results of the testing model

The results of the testing model are unidimensionality, convergent validity and discriminant validity. The results of the testing model presented in Figure No.3 show that the model has Chi squared value as 1040.358; Df at 394; Cmin / df at 2.641 with p-value at 0.002 (<0.05) was not appropriate due to the size of the sample (only 548 respondents surveyed). However, other appropriate measures such as TLI = 0.917; CFI = 0.925 and RMSEA = 0.055 are consistent. Thus, it is still possible to conclude that this model is consistent with data collected from the market.

The results of the test hypotheses

The results of the test hypotheses presented in Table No.7 show that all hypotheses are acceptable at significance (alpha) level of 0.05, the corresponding confidence level of 95% as follows.



Chi-square=1040.358;df=394;CMIN/df=2.641;p=.000;
TLI=.917;CFI=.925;RMSEA=.055

(Source: Authors' survey data, 2017)

Figure 2. Results of study test

Table 7. Test hypothesis test results

			Estimate	S.E.	C.R.	P	Label
SAT	<---	REL	.393	.046	8.617	***	Supported H ₁
SAT	<---	TAN	.335	.045	7.373	***	Supported H ₄
SAT	<---	ASS	.254	.043	5.888	***	Supported H ₅
SAT	<---	RES	.341	.047	7.310	***	Supported H ₂
SAT	<---	EMP	.192	.029	6.639	***	Supported H ₃
LO	<---	SAT	.450	.063	7.111	***	Supported H ₁₁
LO	<---	REL	.170	.043	3.993	***	Supported H ₆
LO	<---	TAN	.152	.041	3.684	***	Supported H ₉
LO	<---	ASS	.142	.038	3.758	***	Supported H ₇
LO	<---	RES	.218	.043	5.062	***	Supported H ₁₀
LO	<---	EMP	.026	.026	1.026	.305	Rejected H ₈

(Source: Authors' survey data, 2017)

DISCUSSION AND CONCLUSION OF THE RESEARCH

Discussion: Firstly, customer satisfaction (SAT) using broadband internet service of VNPT is affected by reliability (REL), responsiveness (RES), assurance (ASS), tangibles (TAN), and empathy (EMP). The H₁, H₂, H₃, H₄, and H₅ hypotheses are supported as follows

$$SAT = 0.393*REL + 0.335*TAN + 0.254*ASS + 0.341*RES + 0.192*EMP$$

This means that when customers examine VNPT's service quality, they will feel satisfied. VNPT's customers use their broadband Internet services, they will be trustful in this service because of the strongest factor with the coefficient $\beta = 0.393$. Customers believe that businesses with good facilities and equipment can suit their needs better. They feel satisfied with staff attitude and their help. In addition, customers feel company's staff and managers be sympathetic and ready to serve their needs related broadband Internet services. Secondly, customer loyalty (LO) using broadband internet service of VNPT is affected by reliability (REL), responsiveness (RES),

assurance (ASS), and tangibles (TAN). The H6, H7, H9, H10, and H11 hypotheses are supported as follows

$$LO = 0.450 * SAT + 0.170 * REL + 0.152 * TAN + 0.142 * ASS + 0.218 * RES$$

This means that customers intend to continue using the broadband business services of VNPT if they are satisfied. This is the most influential factor to customer loyalty with the coefficient $\beta = 0.450$. In addition, they examine service quality better and be trustful in that service. They believe that businesses have good facilities and equipment; service quality is also good as their expectations.

Conclusion

The research results show that VNPT providing broadband Internet services in Vietnam should pay attention to their solutions to suit their customer needs. In order to increase customer satisfaction, VNPT should pay attention to ensuring their service quality which makes customers be trustful in service quality of broadband Internet services. Research results also help businesses look back on the current situation of the business. With the breakdown of their sea cable in recent years, the number of customers has decreased quickly. That can show that their service quality affects directly customer and customer loyalty. Nowadays, customers have required using Internet with high quality and stable connection speeds for their needs for games, movies, studying, work, entertainment, etc. It is not difficult to understand the demand for broadband Internet service is increasing. Therefore, company should increase their service quality to enhance their customer satisfaction and loyalty of broadband Internet service in Vietnam. However, the research subject has certain limitations: (i), due to limited resources in conducting research, the sampling in regarding only 548 customers using broadband internet service in some provinces and city. Thus, the results might not be able to be represented for a large scale nationwide. (ii) This study has been conducted a convenient sampling technique using direct interview methods from the respondents. Therefore, the reliability of the research scale may be higher if random sampling would be chosen.

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