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Assessment of citizens' satisfaction on public administration services of land in Hong Linh Town, Ha Tinh Province, Vietnam using statistical models

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General Note

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discovery

ABSTRACT

This study aimed to appraise citizen's satisfaction on public administration services of land, concentrating on the issuance of certificates of land use right, houses and other land attached assets ownership for households and individuals in Hong Linh Town, Ha Tinh Province, Vietnam. Likert scale was used to interview 125 citizens who came for administrative transactions at the Public Administration Center of Hong Linh Town. Collected data was processed by the statistical software SPSS 20.0 using Cronbach's alpha

and Exploratory Factor Analysis with 6 groups of factors, including Reliability, A*ssurance*, R*esponsiveness*, Empathy, T*angibles*, and Administrative procedure. The result shows that the quality of the service provided by the Center has met the requirements of citizens. In particular, assurance obtained the highest satisfaction with the coefficient β of 0.271; followed by Tangibles, Reliability, responsibility and Empathy with a β value of 0.257; 0.217; 0.210; and 0.202, respectively. Administrative procedures obtained the lowest satisfaction with a β value of 0.192.

1. INTRODUCTION

According to the principles of New Public Management, the transformation process in public administration has brought a greater degree of decentralization and the active participation of citizens (Livingstone *et al.*, 2007; Vigoda-Gadot, 2004). According to Hood (1991), New Public Management, emerged in the 1980s, is an approach to running public service organizations for both sub-national and national levels. The term was coined by scholars from the UK and Australia who were working in the areas of public administration. The new public management represented an attempt to make the public sector more businesslike and at the same time to improve the efficiency of the management models. It emphasized the centrality of citizens who were the recipient of the services or customers to the public sector. A wide variety of research has been conducted to explore the changing role of citizens, improvements in the quality of public services, and new relations between citizens and public administration. However, relatively little research has focused on customer satisfaction and the satisfaction antecedents at the level of local administration (Cicvarić *et al.*, 2009; Ancarani, 2009). Improved public administration services not only contribute to enhancing people's confidence in state agencies, but also create motivation for socio-economic development. The reform of administration services is to improve the relationship between the state and people, meeting the requirements of the people in receiving public administration services. In Vietnam, in the recent years, administrative reform has been sped up and procedures have been simplified and streamlined, especially in the field of issuance of land use right certificates. It is specified in the Land Law 2013, Resolution 43/NQ-CP of the Government on some primary tasks in the reform of administration services for formulation and execution of investment projects using land to improve business environment (issued in 2014) and Resolution 01/2017/ND-CP of the Government on amendments to the decrees on the implementation of the Land Law. This has a direct impact on improving the investment environment, enhancing national competitiveness and preventing loopholes and negatives in the management and use of land.

Citizens' satisfaction with the public administration services is an indicator of the output legitimacy of state agencies. Previous research worldwide have concentrated on the satisfaction with public services (De Hoog *et al.*, 1990; Morgan and John, 1979; Giannoccaro *et al.*, 20118; Héctor, 2012), the relation between satisfaction with public service and trust (Jari *et al.*, 2006), and satisfaction with specific services such as police, public health, and education (Dai and Johnson 2008; Lewis and Pattinasarany, 2009; Charbonneau and Van Ryzin, 2012; Favero and Meier, 2013; Jacobsen *et al.* 2014), etc. In Vietnam, although a number of studies on citizens'satisfaction with the public administration services were conducted (Long and Hoa, 2016; Dan, 2008; Mai *et al.*, 2017), none of these focused on land-related public administration services. The main aim of this study is, therefore, to analyse the variations in citizens' satisfaction with public administration services in the field of the issuance of certificates of land use right, houses and other land attached asset ownership with the case study of Hong Linh Town, Ha Tinh Province.

2. THEORETICAL BASIS AND RESEARCH MODEL

Theoretical background

Customer satisfaction has become a popular topic in marketing practice and academic research since the initial study of customer effort, expectations and satisfaction conducted by Cardozo's (1965). Since there are numerous studies on this topic, the definition and explanation of customer satisfaction appear to be a dissensus (Giese and Cote, 2000; Thanh, 2018). According to Parasuraman *et al.* (1988) and Spreng and Mackoy (1996), customer satisfaction is an emotional response which results from the cognitive difference between experiences and expectations of the service received. Gundersen *et al.* (1996) defined customer satisfaction as a post consumption evaluation for a specific service or product. Meanwhile, Oliver (1980) defined customer satisfaction as the result of an evaluative process that contrasts expectations of pre-purchase with perceptions of performance both during and after the consumption experience. Most discussions on customer satisfaction involve customer expectation of service delivery, actual delivery of customer experience, and expectations that are either exceeded or unmet (Shemwell *et al.*, 1998).

According to Zeithaml and Bitner (2000), customer satisfaction is influenced by customers' perceptions of quality. Meanwhile, others stated that srvice quality is an antecedent of the broader concept of customer satisfaction (Gotlieb *et al.*, 1994; Buttle, 1996;

Lee *et al.*, 2000). Service quality is an important dimension of organizational performance in the public sector as the main output of public organizations is services. Moreover, according to Arawati et al. (2007), profit is not the ultimate goal of public organizations as they have to play different roles such as facilitator, pace setter and socio-economical developer. The origin of studies of citizen satisfaction on public service arose from consumer research, and these studies mostly focused on citizens as consumers and their perceptions and evaluations. The earliest studies were primarily focused on local services (Stipak 1979), and the discrepancy between objective measures of service quality, and subjective measures, and perceptions of performance (Stipak 1977, 1980).

The approach of this study has come from the viewpoint of the people who are customers of the Public Administrative Center of Hong Linh Town, who provides information related to resolving public administration procedures on land, including the issuance of land use right certificates.

Research model

SERVQUAL is a statistical scale first introduced by Parasuraman *et al.* in 1985. The scale was originally used to compare expectations with perceptions on 10 service quality aspects. By 1988, this scale was further identified with 5 dimensions of service quality namely Tangible, Reliability, Responsiveness, Assurance and Empathy. These five dimensions are thus assessed by a total of 44 variables in which 22 variables to measure the general expectations of customers concerning a service; and the remaining 22 variables to measure the perceptions of customers regarding the levels of service actually provided by the company within that service category (Ladhari, 2009). However, SERVQUAL has been criticized on its confusion which is mostly due to the large number of variables and lengthy questionnaires. The matched pair's design of the questionnaire in SERVQUAL makes a very long questionnaire. In practical terms, lengthy questionnaire means that the questionnaire would take long time in a face-to-face interview. Lengthy questionnaires are known to induce respondent fatigue which may have potential implications for data reliability. In addition, lengthy questionnaires add to the time and cost involved in data collection and data analysis. Coding, collation and interpretation of data is very time consuming and in the case of lengthy questionnaires administered across large samples, the findings cannot be used to address urgent quality-related problems. Another instrument called SERVPERF with a simpler model was proposed by Cronin and Taylor (1992) with the aim of replacing SERVQUAL. SERVPERF model is based on the cognitive level of customers on using service, ignores the perceived value of customers. The SERVPERF model represents marked improvement over the SERVQUAL model by reducing the number of variables by 50 percent while achieving results that correlate well with SERVQUAL, with no reduction in diagnostic power. According to Zeithaml and Bitner (1996), the satisfaction of customers is considered by factors such as: quality of service, quality of product, price, situation factor and individual factor.

The scale in this research was based on the theoretical framework and tested scales in previous studies. The scale had been adjusted to be appropriate for the research context, cultural characteristics and conditions of the local area. The model contains six independent dimensions with 22 survey variables and 03 dependent variables on satisfaction (Table 1).

Table 1 Scale for evaluating citizen's satisfaction on the issuance of certificate of land use right, houses and other land attached assets ownership in Hong Linh Town

No	Variables	Label
I	Reliability	
1	Customers feel safe in their transactions	Q1
2	The results of settlement are exact	Q2
3	The procedure was undertaken within the specified time	Q3
II	Assurance	
4	Staffs communicate well	Q4
5	Staffs are professional proficient	Q5
6	Staffs have good skills in finding solution to troubles.	Q6
7	Staffs are always nice and polite to citizens	Q7
III	Responsibility	
8	Staffs are ready for prompt responses to the citizen's need	Q8
9	Staffs are always willing to help citizens	Q9
10	Staffs always inform the citizen about requirements	Q10
11	Staffs are fair with citizens	Q11

IV		Empathy	
	12	Citizens contact with staffs easily	Q12
	13	Citizens are supported enthusiastically by staffs	Q13
	14	Staffs understand specific expectation of the citizen	Q14
V		Tangibles	
	15	Transaction place is spacious and cool	Q15
	16	Transaction place is fitted with all conveniences	Q16
	17	Transaction place is modern	Q17
VI		Administration procedure	
	18	Administration procedure is public and clear	Q18
	19	Documents are simple and legible	Q19
	20	Convenience in handling administrative procedures	Q20
	21	The solving time is reasonable	Q21
	22	Fees and charges are reasonable	Q22
VII		Citizen's satisfaction	
	23	Citizens are satisfied with the delivery of public	SAT1
	24	Citizens are satisfied with the working method of Staffs	SAT2
	25	Citizens are satisfied with the results of solving	SAT3

3. SCOPE AND METHODOLOGY
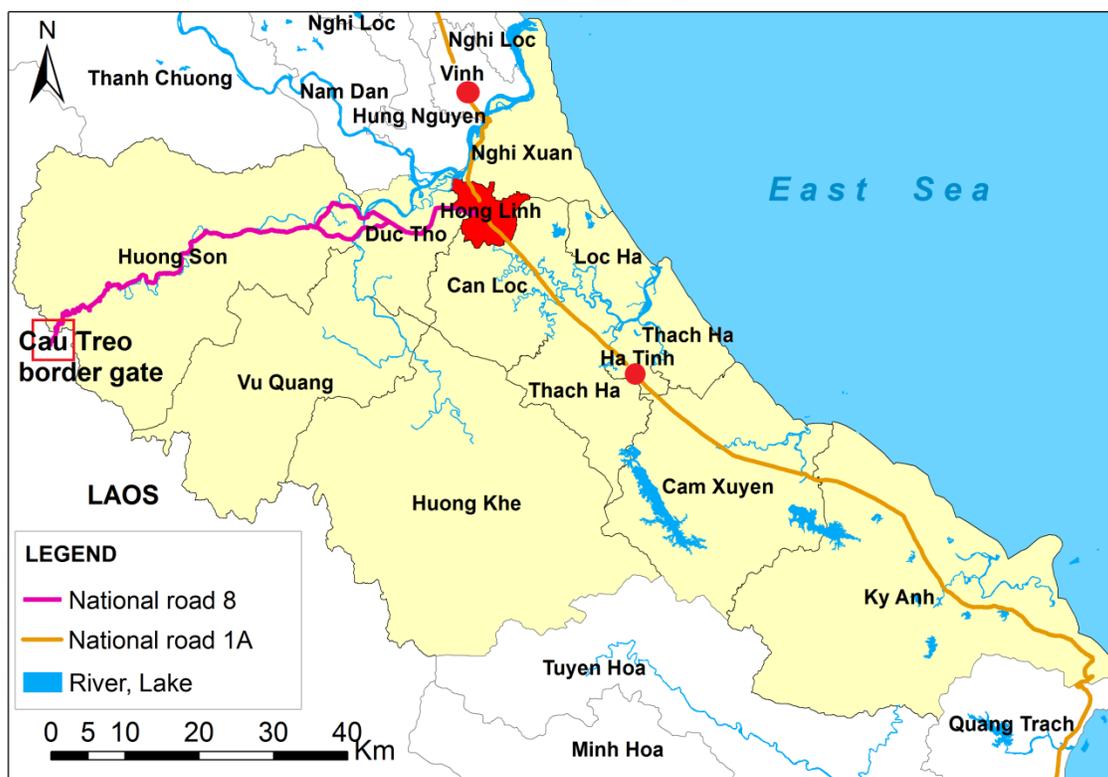
Scope of the study

Figure 1 Location of Hong Linh Town in Ha Tinh Province

The study concentrated on the issuance of certificates of land use right, houses and other land attached asset ownership for households and individuals in Hong Linh Town, which is located in the northern part of Ha Tinh Province, about 15 km to the south of Vinh City and 35 km to the north of Ha Tinh City. As of 2019, the town has a total natural area of 5,855.23 hectares and a

population of 53,500 people (GSO, 2019). The main advantage of the town is that it is located on National Road 1A and National Highway 8A which join the town and Cau Treo international border gate economic zone and Laos. The town is also located near major economic and cultural centers of the province. Geographic location of Hong Linh is presented in Figure 1.

Methodology

- Secondary data collection: Secondary data on the issuance of certificates of land use right, houses and other land attached asset ownership for households and individuals in Hong Linh Town were collected from the Public Administrative Center and Department of Natural Resources and Environment of the town.

- Primary data collection: Primary data were collected from households and individuals who went the Public Administrative Center of Hong Linh to make the procedure for granting land use right certificates during the 2013 - 2017 period. The approach employed is a five-point Likert scale, representing a range of attitudes from 1 - strongly dissatisfy to 5 - strongly satisfy to measure citizen satisfaction. The six dimensions, which consist of 22 variables, namely Reliability, Assurance, Responsibility, Empathy, Tangibles, and administration procedure were used (Table 1). The minimum sample size for factor analysis is five samples for each variable to be estimated (Chu and Ngoc, 2008) and for regression analysis is N > 50 + 8m (m is the number of predictor variables) (Tabachnick and Fidell, 1996), thus the questionnaire was completed by 226 respondents. The survey was carried out by the researchers between march 2017 to June 2017.

- Data analysis: The primary data was verified by Cronbach's Alpha, Exploratory Factor Analysis and Multiple Regression Analysis using Statistical Package for Social Science (SPSS) version 20.0.

+ Cronbach's Alpha reliability coefficient: Cronbach's Alpha is a test used for the estimation of the reliability, or internal consistency, of a composite score. The data will be accepted when the value of Cronbach's Alpha from 0.6 to 0.95 and Corrected Item - Total Correlation > 0.3 (Hair *et al.*, 1998).

+ Exploratory Factor Analysis (EFA): EFA was used to determine the underlying relationships between measured variables. The data will be accepted when KMO (Kaiser - Meyer - Olkin) ranges from 0.5 to 1.0 and Factor Loading is less than 0.35 or the distance between two of Factor Loading of one variable in 2 different factors is greater than 0.3 (Igbaria et al, 1995); Total Variance Explained is also larger than 50%; Bartlett's coefficient at sig <0.05; Eigenvalue coefficient value ≥ 1 (Kaiser, 1960).

- Multivariate Regression Analysis (MRA): According to Hair *et al.* (1998), MRA is a useful technique that can be used to analyze the relationship between a single dependent variable and several independent variables. In this study, MRA was employed to test the impact of service quality on citizen's satisfaction, more specifically, it was employed to examine the level of relevance of citizen's satisfaction and the influencing factors of the issuance of land use right certificates (Reliability, Assurance, Responsibility, Empathy, Tangibles, and Administration procedure).

4. RESULTS AND DISCUSSION

The result of the issuance of certificates of land use right, houses and other land attached asset ownership in HongLinh District from 2012 to 2016

A certificate of land use right, houses and other land attached asset ownership (hereinafter called "Certificate") is a certificate issued by a competent State body to a land user (individual, household, organization, ect.) in order to assure the lawful rights and obligations of such land user. The issuance of certificates for land users in general as well as for households and individuals in particular is always paid close attention by the authorities of Natural Resources and Enviroment Agencies.

In recent years, the management of land in Hong Linh Town has become gradually orderly, especially land registration and land related certificate issuance. During the period of 2012 - 2016, 19,776 certificates were granted for households and individuals (Table 2). This number reached approximately 98% of the plan of 20180 certificates set by the local government.

The data from Table 2 show that the number of certificates in case of issuance after land consolidation was the largest with 15,028 certificates, and the number of certificates in case of partitionor consolidation of land parcels was the smallest with 744 certificates. The number of certificates mainly issued in 2 years (2015 and 2016), accounting for 86.86% of the total number of certificates issued throughout the period investigated. Following the implementation of Directive No. 08-CT/TU dated 8 May 2012 of Ha Tinh province's Standing Committee on promoting land consolidation and encouraging land accumulation for production development in large scale, in 2015, Hong Linh town completed land consolidation. In order to create favorable conditions for people in land use and improve land administration effectiveness, the People's Committee of Hong Linh town focused on accomplishing issuance of land use right certificates within these years.

Table 2 The results of the certificate issuance in HongLinh Town in the period of 2012 - 2016
Unit: number of certificates

No	Forms of issuance	2012	2013	2014	2015	2016	Total
1	Partitioned, consolidated land parcel	128	155	195	110	156	744
2	Transfer of land use right	277	345	437	576	640	2,275
3	First issuance	145	639	204	201	81	1,270
4	Change and reissuance of certificate	181	48	27	14	89	359
5	Issuance after land consolidation	0	0	0	9,650	5,378	15,028
	Total	631	1,187	863	10,594	6,450	19,676

Assessment of citizen's satisfaction on public administration services of land use right certificate issuance

Cronbach's alpha reliability test

The first step of measurement testing process is reliability test. One method to measuring reliability is through internal consistency which refers to the degree of inter-correlation among variables that comprise the measure or summated scale. The most widely accepted measure of internal consistency is Cronbach's alpha which is the average of the correlation coefficient of each item with each other item. In this study, based on Cronbach's coefficient, internal consistency for SERVQUAL dimensions was estimated to be 0.790 for reliability dimension, 0.747 for assurance dimension, 0.842 for responsibility dimension, 0.756 for empathy dimension, 0.754 for Tangibles dimension and 0.735 for Administration procedure dimension (Table 3). From Table 3, it can be seen that Cronbach's Alpha coefficient of observed variables varied between 0.623 and 0.815, which proved the data got acceptable reliability. Through the result of corrected item-total correlation analysis, it was realized that the corrected item-total correlation value of Q22 (Fees and charges are reasonable) was less than 0.3 (0.227) which indicates that the corresponding item did not correlate very well with the overall scale and, thus, it may be dropped.

Table 3 Reliability analysis

Variables	Corrected item-total correlation	Cronbach's Alpha if variable is deleted	Variables	Corrected item-total correlation	Cronbach's Alpha if variable is deleted
I. Reliability (Cronbach's Alpha = 0.790)			IV. Empathy (Cronbach's Alpha = 0.756)		
Q1	0.611	0.736	Q12	0.557	0.708
Q2	0.666	0.679	Q13	0.674	0.688
Q3	0.623	0.729	Q14	0.541	0.729
II. Assurance (Cronbach's Alpha = 0.7470			V. Tangibles (Cronbach's Alpha = 0.754)		
Q4	0.480	0.721	Q15	0.548	0.717
Q5	0.634	0.635	Q16	0.642	0.623
Q6	0.539	0.690	Q17	0.577	0.679
Q7	0.516	0.703			
III. Responsibility (Cronbach's Alpha = 0.842)			VI. Administration Procedure (Cronbach's Alpha = 0.735)		
Q8	0.681	0.797	Q18	0.628	0.637
Q9	0.742	0.700	Q19	0.646	0.635
Q10	0.642	0.814	Q20	0.642	0.727
Q11	0.640	0.815	Q21	0.393	0.726
			Q22	0.227	0.788

discovery

Exploratory Factor Analysis (EFA)

In EFA, KMO test is a measure of how suited the data is for factor analysis. The KMO measure of sampling adequacy was computed to quantify the degree of intercorrelations among the variables, and the calculation resulted a KMO value of 0.803. A high-KMO value close to 1 indicates that pattern of correlations is relatively compact and so factor analysis should yield distinct and reliable factors. More importantly, the Bartlett's test of Sphericity was absolutely significant at 0.000. These indicate that the data were appropriate for factor analysis and surveyed variables have a linear correlation with a significant variable (Table 4).

Table 4 Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.803
Bartlett's Test of Sphericity	Approx. Chi-Square	1071.787
	df	210
	Sig.	0.000

Table 5 presents a list of the eigenvalues associated with each linear component (item) before extraction, after extraction and after rotation. The second column shows the eigenvalue in terms of the percentage of variance explained (item 1 explains 29.285% of total variance). It should be noted that the first few variables explain relatively large amounts of varience (especially item 1) whereas subsequent variables explain only small amounts of variance. According to Kaiser (1960), all variables with eigenvalues greater than 1 will be extracted, any item that has an eigenvalue of less than 1 does not have enough total variance explained to represent a unique item, and it therefore disregarded. Thus, 15 variables (from item 7 to item 21) were elimilated although they represented over 30% the variance explaned. The values after extraction are the same as the values before extraction, exept the values for the discarded variables which were ignored (hence, the table is blank after the sixth variables). The values in the final part of the table represent the distribution of the variance after varimax rotation. Since varimax rotation tries to maximize the variance of each of the factors, the total amount of variance accounted for is redistributed over the six extracted factors. Factor 1 accounted for 13.532 % of the variability in all 21 variables, and so on. The extraction of the six factors accounted for 67.851% of the common variance; this means that a six-factor model is associated with a percentage of explained common variance of 67.851%.

Table 5 Total Variance Explain

Variables	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.150	29.285	29.285	6.150	29.285	29.285	2.842	13.532	13.532
2	2.197	10.464	39.749	2.197	10.464	39.749	2.530	12.046	25.579
3	1.822	8.675	48.424	1.822	8.675	48.424	2.400	11.427	37.005
4	1.491	7.102	55.526	1.491	7.102	55.526	2.274	10.831	47.836
5	1.446	6.884	62.410	1.446	6.884	62.410	2.198	10.469	58.305
6	1.143	5.441	67.851	1.143	5.441	67.851	2.005	9.546	67.851
7	.813	3.872	71.723						
....									
21	.182	.867	100.000						

Finally, the rotated component matrix presents the factor loading for each of the investigated variables. The factor loading expresses the relationship between each variable and underlying factor. Table 6 summarizes factors for Reliability, Assurance, Responsibility, Empathy, Tangibles, and administration procedure. The independent variables extracted from the rotated component matrix were arranged in descending order of the influence of each factor on citizen's satisfaction. The results obtained in the matrix of correlation indicate that all the variables have high degree of positive relationship with another one. The values rank from 0.579 to 0.850 with Q21. (The time on solving is reasonable) being the lowest while Q13 (Citizens are supported enthusiastic from staffs)

being the highest. In general, the data is confident if Factor Loading is greater than 0.3. However, higher factor loadings indicate that variable is closely associated with the factor. It also contributes to construct validity (Hair *et al.*, 2010). Thus, all standardized factor loadings in our model were significant; this was a confirmation of the validity of the theoretical framework.

Table 6 Rotated Component Matrix

Variables	Component						Variables	Component					
	1	2	3	4	5	6		1	2	3	4	5	6
Q10	0.798						Q2				0.839		
Q9	0.778						Q1				0.789		
Q8	0.760						Q3				0.787		
Q11	0.758						Q13					0.850	
Q18		0.779					Q14					0.781	
Q20		0.778					Q12					0.697	
Q19		0.765					Q17						0.800
Q21		0.579					Q15						0.743
Q5			0.755				Q16						0.674
Q7			0.746										
Q4			0.678										
Q6			0.645										

The results of Exploratory Factor Analysis for dependent factors (SAT1, SAT2, and SAT3) were also identified a KMO coefficient of 0.685 and a Total Variance Explained of 65.46. In addition, Bartlett's test of Sphericity was significant (sig < 0.05), coefficient of Eigenvalues was larger than 1, Factor Loadings were 0.625, 0.734 and 0.783, respectively. Thus, the dependent variables were also eligible for this study.

Multiple Regression Analysis

In the present study, Multiple Regression Analysis was employed to test the impact of service quality on citizen's satisfaction. It can be observed from the result of Multiple Regression Analysis that the value of Adjusted R Square was 0.766, which indicates that 76.6 percent of citizen's satisfaction can be explained by the six independent variables with 21 variables of service quality. Thus, there was effect of the service quality on customer satisfaction. Significant value is 0.000, which is less than the significant level (0.01) for all variables. Thus, the multiple linear regression models are adequate to this study. Additionally, the Durbin Watson coefficient (DW) was found to be 1.776, which belongs to the range from 1.0 to 3.0 so the study model was not correlative itself. Table 7 also shows that each of the variables had a tolerance value of more than 0.10 and a variance inflation factor (VIF) of less than ten. The finding indicates that the model had no serious multicollinearity problem (Hair *et al.*, 1998). From these analyses, it can be concluded that there was a statistically significant link between service quality and citizen's satisfaction.

Table 7 Linear Regression Analysis

Model	Unstandardized Coefficients	Standardized Coefficients	Sig.	Collinearity	
	(β)	Beta (β)		Tolerance	VIF
Constant	-1.286		0.000		
Reliability	0.217	0.252	0.000	0.834	1.199
Assurance	0.271	0.261	0.000	0.693	1.442
Responsibility	0.210	0.194	0.000	0.758	1.320
Empathy	0.202	0.195	0.000	0.797	1.254
Tangibles	0.257	0.201	0.000	0.667	1.498

Administrative Procedures	0.192	0.234	0.000	0.664	1.505

Sig.F = 0.000

R Square = 0.778

Adjusted R Square = 0.766

Durbin - Watson = 1.776

The Standardized Coefficient (β) value was positive so the six factors had a linear relationship in the same direction with citizen's satisfaction on public administrative services of Hong Linh Town. With this coefficient (β), we can compare the variables to see which variable had the strongest relationship with the dependent variable, since all of them are on the scale of 0 to 1. In Table 7, "Assurance" had the strongest relationship with satisfaction with a β value of 0.271, which means that 1 unit change in assurance will cause a 0.271 unit change in satisfaction. Tangibles, Reliability, Responsibility and Empathy have β values of 0.257, 0.217, 0.210, and 0.202, respectively. While "administration procedure" has the weakest impact on satisfaction with β a coefficient of 0.192.

5. CONCLUSION

During the period of 2012-2016, 19,776 land-related certificates were granted for individuals and households in Hong Linh Town. The certificates were granted for five cases: partition or consolidation of land parcels, transfer of land use right, first issuance (for resident land), change and reissuance of certificate, and issuance after land consolidation. The number of certificates in case of issuance after land consolidation was the largest with 15,028 certificates, while the number of certificates in case of partitioned, consolidated land parcel was smallest with 744 certificates. The number of certificates granted mainly focused in 2 years (2015 and 2016), accounting for 86.86% of the total number of certificates issued throughout the period.

The results of this study indicate that six dimensions of service quality had significant influence on citizen's satisfaction. These dimensions include Reliability, Assurance, Responsiveness, Tangibles, Empathy, and administration procedure, of which Assurance got the highest satisfaction with β value of 0.271; followed by Tangibles, Reliability, Responsibility and Empathy that have β values of 0.257, 0.217, 0.210, and 0.202, respectively. Administrative procedures had the weakest impact on satisfaction with β = 0.192. The results of this study are expected to be useful information for the local government in its effort to improve administrative services in general and administrative services of land in particular.

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