Exploring the impact of support service on student satisfaction: The case of Vietnam higher education

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ABSTRACT

This study was conducted to assess the factors that affect students’ satisfaction with support services provided by universities in Vietnam. Research results show that five factors related to library services (TV), food service (CT), financial support (TC), support from departments (PB), and extracurricular activities (NK) have affected student satisfaction (HL). Research methods used in this study are Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equations Modeling (SEM). Participants of questionnaires include 1,687 students studying at Vietnamese universities. SEM results show that the level of positive impact varies between components to student satisfaction. In addition, multi-group analysis results also affirmed the difference in characteristics of schools (public, private) and geographic areas (northern, central, and southern areas) between the research models’ relationships.

1. Introduction

Higher education trends are gradually accepted as a type of service. Universities are service providers for their main customers as students. In addition, in the current context, when the competitive pressure in higher education is becoming increasingly fierce, today’s universities need to focus more on students’ satisfaction (De Jager & Gbadamosi, 2013). This is an essential customer because students are direct objects of the training process. In fact, in Vietnam, universities are increasingly interested in demand as well as student satisfaction. In addition to training functions, support services are also considered essential standards that attract and maintain students to the school (Levitz, 2019). However, there are no comparative studies (about the type of university or geographic region) of the relationship between student satisfaction for university support services. This study was conducted on the survey’s sample size, including 1,687 students at universities in Vietnam, to address the following issues: What factors affect students’ satisfaction in using support services at universities in Vietnam? The difference in the level of satisfaction between universities of different types or geographic areas? Which universities need to address essential issues to improve the quality of support services, thereby improving the organization’s competitiveness? The research results are expected to be a reference facility to enhance support services at universities.
2. Literature review

2.1. Service and quality of service

According to Zeithaml and Bitner (2000), the service is behaviors, processes, how to perform a specific job to create value used for customers to satisfy customers’ needs and expectations. Park (2015, pp. 78-79) defines service as “Activities, benefits or satisfaction provided for sale or provided with the sale of goods.”

Feigenbaum (1991) commented that the quality of service is a customer’s decision based on practical experience for products or services, measured based on customer requirements, which can be either or not raised, is consciousness or simply feeling, completely subjective or professional, and always representing the dynamics in a competitive market. Service quality is the level that a service meets the needs and expectations of customers (Asubonteng, Mccleary, & Swan, 1996; Lewis & Mitchell, 1990; Wisniewski, 2001). Edvardsson, Thomasson, and Ovretveit (1994) said that service quality is a service that meets the expectations of customers and satisfies their needs. According to the research results of Parasuraman, Zeithaml, and Berry (1985), Nguyen and Nguyen (2003) are considered one of the first authors to study the quality of services in a particular and detailed way of marketing with the given model with five gaps in service quality. In particular, the core of ensuring and improving the quality of service is to reduce and gradually remove gaps according to the service quality model.

2.2. Support services for students

When higher education is considered a higher education service, universities are considered a service provider for different customers: The government, businesses, students, parents, and social community, of which students are both the most crucial beneficiary (Weerasinghe & Fernando, 2017). In enrollment, to attract students to study at schools, more and more universities pay attention to improving student services and student satisfaction in universities (De Jager & Gbadamosi, 2013). According to a UNESCO’s report (2019), universities often have specialized support units for support services to provide comprehensive learning experiences for students. To measure and evaluate student satisfaction with the quality of support services provided by the school, De Jager and Gbadamosi (2013) proposed a scale of factors affecting satisfaction Students when experiencing support services provided by the school, scale of 04 factors: (1) Library - Learning materials, (2) Food service, (3) Financial activities, (4) Support from departments. The tested scale was appropriate in the scope of research as universities in South Africa. Research results have also affirmed the suitability of this scale. Weerasinghe and Fernando (2017), with Levitz (2019), continued to develop a survey scale in combination with the experience of measuring satisfaction on student support services at universities in the US, England, and Canada. Questions to measure student satisfaction when using support services are divided into five groups, including (1) Library service, (2) Food service, (3) Financial activities, (4) Support from departments, (5) Extracurricular activities.

2.3. Measure student satisfaction with support services

Satisfaction is a positive emotional state when a person has met needs. Student satisfaction is often accepted as a short-term attitude and the result of evaluating the student’s education experience (Elliot & Healy, 2001). Weerasinghe and Fernando (2017) consider all research available on student satisfaction with higher education and do not see many changes in the definition of this concept. In the research results of Wiers-Jenssen, Stensaker, and Grogaard (2002), university managers need to pay more attention to consumers’ views and often prioritize the factors that the university can control to meet the needs of students better. Studies on student
satisfaction indicate that there are three main factor groups affecting students’ satisfaction: (1) Quality of education related to teaching programs and faculty members; (2) Social environment; and (3) Facilities and resources (Kane & Williams 2008; Wiers-Jenssen et al., 2002). Hemsley-Brown and Oplatka (2006); Senthilkumar and Arulraj (2011) showed an essential role of higher education management, based on the ideas and practices of current higher education according to the market mechanism. The increase in competition in the educational environment has led higher education institutions that apply management techniques to improve the efficiency and quality of services they provide (Telford & Masson, 2005; Yeo, 2008) and provided from more active market access (Ivy, 2008). If universities want to meet the requirements of students, they must be aware of their providing products and how they are recognized in the market. Strategic planners need to be aware of students’ influencing factors and impacts (Moogan, Baron, & Bainbridge, 2001). Accordingly, Munteanu, Ceobanu, Bobalca, and Anton (2010) also spoke in their research that in a competitive market, where organizations for customers, customer satisfaction became an important difference factor of marketing strategy. It is said that customer satisfaction mostly depends on the level of products provided by an organization that provides or surpasses customers’ expectations (Khan & Matley, 2009; Telford & Masson, 2005). Senthilkumar and Arulraj (2011) argue that students are the main customers of higher education institutions and often have different roles. They are both a product of the training process, both an internal customer of many campus establishments, both workers in the learning process, and internal customers of the use of home services the university provides. This shows the importance of the interaction relationship between components because providing educational services at higher education institutions requires interaction between students, lecturers, parents, employers, communities, and governments. This relationship will affect the common satisfaction of different stakeholders (Nicolescu, 2009). Senthilkumar and Arulraj (2011) claimed that among all the stakeholders, students were considered the most important stakeholders because they were the most critical customer of higher education institutions compared to these other stakeholders. Brochado (2009) indicates that when students are considered significant customers of a higher education institution who directly receive the service provided, the student’s service quality becomes extreme. It is crucial for its higher education institutions and management boards. Higher education must provide a quality learning experience for students (Yeo, 2008). The perspective of student satisfaction for universities has been clearly shown (Astin, 1993; Wright & O’Neill, 2002). Students have higher requirements in using support services from universities (Weerasinghe & Fernando, 2017; Wright & O’Neill, 2002).

2.4. Research model

Based on the research results of Senthilkumar and Arulraj (2011), De Jager and Gbadamosi (2013), Weerasinghe and Fernando (2017), Levitz (2019), this article to determine the relationship between related factors of support services (provided by universities for students) such as library services, food services, financial activities, support from departments, extracurricular activities with student satisfaction. Senthilkumar and Arulraj’s research (2011) has proven to have a relationship between the facilities and equipment of the library at the university and student satisfaction. De Jager and Gbadamosi (2013), Weerasinghe and Fernando (2017) also affirmed the positive influence of attitudes and knowledge of employees at the library on student satisfaction. Based on better theoretical theory, this study will verify the relationship between library services and student satisfaction. We will have the hypothesis:

**H1: Library service affects students’ satisfaction**

Brochado (2009) affirmed that the choice continues to stick with the university of students
involved in catering services provided by the school, namely through the canteen system of the school or partner provided. Weerasinghe and Fernando (2017), Levitz (2019) proposed food service as a student support service provided by the university. This study will realize the above relationship at the scope of the more significant research, so we have the hypothesis:

**H2: Food service affects students’ satisfaction**

De Jager and Gbadamosi (2013), Weerasinghe and Fernando (2017), Levitz (2019) affirmed the importance of three factors: Financial support, support from departments, and extracurricular activities. There is a positive impact on student satisfaction. Therefore, we have the corresponding hypotheses:

**H3: Financial support activity affects students’ satisfaction**

**H4: Support from departments affect students’ satisfaction**

**H5: Extracurricular activities affect students’ satisfaction**

In addition, with limited content in research results, Brochado (2009), Nicolescu (2009), and Senthilkumar and Arulraj (2011) proposed that future studies should add to the characteristics related to institutions, culture, and society to assess relationships related to the components of support services. Therefore, the two controlled variables on the type of university (public, private) and geographic area (North, Central, South) were added to the model in this study. Based on the contents of the hypothesis, the research model is proposed:

![Figure 1. Research model](image)
3. Methodology

3.1. Measurement

The study scale was built on the results of Senthilkumar and Arulraj (2011), De Jager and Gbadamosi (2013), Weerasinghe and Fernando (2017), and Levitz (2019). The scale consists of five conceptual groups with 25 questions, including library service, food service, financial support, support from departments, and extracurricular activities. In addition, student satisfaction for each component is measured by group respective 05 questions.

Quantitative research methods are used to handle and analyze research data. Students studying at universities in Vietnam are the participants who answer the questionnaire. The study was conducted with 1,687 students at ten universities across the scope of expansion in all three regions (North, Central, Southern) and diverse in the type of university (public or private). Official quantitative surveys are carried out from June 2020 to December 2020. Assessing the scale’s reliability is carried out by the variable-general correlation target (Cronbach Alpha), Exploratory Factor Analysis (EFA). The testing hypothesis is carried out by analyzing the CFA (Confirmatory Factor Analysis) to test the scale and multi-group structural analysis method.

3.2. Sample and data collection

Likert 5 levels are applied to measure variables in the model, with values 1 (absolutely disagree) and 5 (absolutely agreed). Samples are selected by a convenient sampling method. The advantage of this method is easy to access and get information. The study also selected a large sample size to overcome defects related to sampling errors. Students who answer the questionnaire are those who are studying at Vietnamese universities. The number of questionnaires is 2,400. After collecting and checking, 713 questionnaires were eliminated (accounting for 30.21%) due to incorrect response information or much vacant. Finally, 1,687 questionnaires (accounting for 69.79%) completed. Data is processed through SPSS software. Results of data analysis and inspection of research hypotheses are carried out with SPSS and AMOS software.

4. Results and discussion

Of the total number of gender structures, 55.7% of participants are female. In addition, students answer the survey questionnaire, which has 28% of the first-year student, 24% is second-year students, 31% of the third year, and 17% is fourth-year students. Regarding the university type, 50% of public universities and 50% of private universities. Regarding the geographical area, the proportion of universities in the southern region is 40%, the Central region is 40%, and the Northern region is 20%.

The results of determining the concentration level and the variety of scales in items are expressed through average value and standard deviation values. An average value is near 04 (on a scoring scale from 1 to 5). This reflects the consensus level (right deviation) of the value of the scale of each concept group. The standard deviation - the difference between the value of each observation compared to the average value - is also between 0.71 - 1.22. Thus, the variation of the scales is not tremendous, or in other words, the survey value is stable.

The scales in this study are evaluated through the reliable coefficient Cronbach Alpha and exploration factor analyzing (EFA) with data collected from official research (n = 1,687). The result of the Cronbach’s Alpha shows that the scale has reached its reliability (Cronbach’s Alpha > 0.7 coefficient and all grades in the group with variable correlation coefficients - Total > 0.3) (Table 4.1). Thus, all meetings are required to continue testing the EFA factor analysis.
Table 1
Cronbach’s Alpha result

| Number of items | Cronbach’s Alpha | Result      |
|-----------------|------------------|-------------|
| Library service | 5                | 0.81        | Keep stable |
| Food service    | 5                | 0.88        | Keep stable |
| Financial support | 5            | 0.76        | Keep stable |
| Support from departments | 5 | 0.86        | Keep stable |
| Extracurricular activities | 5 | 0.88        | Keep stable |
| Students’ satisfaction | 5 | 0.81        | Keep stable |

Source: Author’s data analysis results

EFA results show that data reaches convergence values due to the satisfaction of the value of the factor load factor greater than 0.5 and AVE higher 0.5, six factors deducted at Eigenvalue are 1.27, and the total variance is 69.87%. The items that do not meet the requirements of the factor loading value will be removed from the CFA testing process, including TV3 (Quick service provider library staff), CT1 (Convenient catering location), PB2 (Support quickly). The official EFA results also show that six factors correspond to the initial theoretical basis (Table 4.2).

Table 2
EFA result

| Code | Items                                      | Factor                                      |
|------|--------------------------------------------|---------------------------------------------|
|      | Library service                           | Library service | Food service | Financial support | Support from departments | Extracurricular activities | Student satisfaction |
| TV1  | Library provides responsible services      | 0.660                                      |              |                 |                        |                        |                        |
| TV2  | The library has enough resources to meet the learning needs | 0.737                                      |              |                 |                        |                        |                        |
| TV4  | The library is the perfect learning place for students | 0.778                                      |              |                 |                        |                        |                        |
| TV5  | Library fully equipped with the necessary equipment | 0.971                                      |              |                 |                        |                        |                        |
| CT2  | Serving staff with fun, enthusiastic attitudes | 0.815                                      |              |                 |                        |                        |                        |
| Code | Items                                                                 | Factor                              |
|------|----------------------------------------------------------------------|-------------------------------------|
|      | **Library service** | **Food service** | **Financial support** | **Support from departments** | **Extracurricular activities** | **Student satisfaction** |
| CT3  | Comfortable space        | 0.756 |
| CT4  | Food safety and hygiene  | 0.732 |
| CT5  | Diversity of food and beverage | 0.697 |
| TC1  | Universities have diverse scholarship policy | 0.628 |
| TC2  | University scholarship policy is suitable for students | 0.782 |
| TC3  | Students efficiently receive university scholarships | 0.669 |
| TC4  | Students are easy to pay tuition | 0.750 |
| TC5  | Students easily receive tuition according to regulations | 0.736 |
| PB1  | Students quickly find information when need supported | 0.615 |
| PB3  | Support staff have an enthusiastic and polite attitude | 0.749 |
| PB4  | Support staff solve the questions (or problems) of students | 0.467 |
| PB5  | Convenient contact location | 0.438 |
| NK1  | Extracurricular activities are diverse, many choices | 0.667 |
| NK2  | Extracurricular activities are useful and efficiency | 0.876 |
Based on this inspection result, we can conclude that the components in the research model are suitable to implement the CFA method. The CFA results show that the model has acceptable compatibility with: $X^2 = 458.67$ (p = 0.000); GFI = 0.866; CFI = 0.922 and RMSEA = 0.067. The results also show that the correlation coefficient of concepts is less than 0.1, confirming the difference between concepts. The results also show that the scale is satisfactory on synthetic reliability requirements ($PC \geq 0.75$) and the extract method ($\geq 0.50$). Thus, the indicators show that the relevance of data with the setup model is at acceptable levels and ready to perform structural model analysis (SEM).

In SEM analysis, the estimated results (standardization) of the parameters in the research model are shown in Table 4.3. This result indicates that the display relationships are statistically significant (p-value < 5%). In addition, this result also gives us the conclusion that the
measurements of the concepts in the theoretical contact value model are because “Each measurement is linked to other measurements as expected theoretically” (Churchill, 1979, pp. 64-73).

**Table 3**

SEM result

| Hypothesis | Relationship | ML    | Se    | CR   | p-value |
|------------|--------------|-------|-------|------|---------|
| H₁         | TV => HL     | 0.208 | 0.069 | 3.72 | 0.001   |
| H₂         | CT => HL     | 0.379 | 0.082 | 4.81 | 0.002   |
| H₃         | TC => HL     | 0.375 | 0.079 | 5.13 | 0.000   |
| H₄         | PB => HL     | 0.107 | 0.058 | 4.96 | 0.003   |
| H₅         | NK => HL     | 0.167 | 0.102 | 5.88 | 0.022   |

Chi-square / df = 1.261, CFI = .928, TLI = .926, IFI = .827, GFI = .886, RMSEA = .0157
* R² = 0.46

Source: Author’s data analysis results

**Figure 2. SEM results**
The value of the estimated effect of variables in the research hypothesis is between 0.107 - 0.379, with P-value < 0.05. Thus, the variables in the research model are statistically significant. The appropriate level of the model in the sample base compared to the overall is shown at the R² value equal to 0.46.

To assess the difference between the characteristics of the two control variables as the type of school (Public, Private) and geographical positions (North, Central, Southern) in the model, the research team continues to perform multi-group structural analysis for each variable. For control variables are the type of university (public, private), the P-value value is 0.038 < 5% meaning level. The results show a difference in students’ level of satisfaction with support services between two types of public and private universities. The specific differential evaluation results are shown in Table 4.4.

Table 4
Multi-group structure analysis of university types

| Relationship | Universities (Public) | Universities (Private) |
|--------------|-----------------------|------------------------|
|              | ML        | P-value | ML        | P-value |
| TV => HL     | 0.208     | 0.017   | 0.211     | 0.016   |
| CT => HL     | 0.365     | 0.021   | 0.429     | 0.026   |
| TC => HL     | 0.376     | 0.011   | 0.372     | 0.008   |
| PB => HL     | 0.107     | 0.022   | 0.112     | 0.019   |
| NK => HL     | 0.171     | 0.016   | 0.152     | 0.018   |
| R²           |           | 0.301   |           | 0.357   |

Source: Author’s data analysis results

The analysis results in the type of school control show the level of explanation of independent variables on the dependency variable (student satisfaction) in the type of private university (R² = 0.357) higher compared to the type of public school (R² = 0.301). This proves the importance of independent variables to students’ satisfaction when considering the object of private universities. The result of comparing the estimated value in each couple of relationships in Table 4.4 shows the difference between the level of influence in each relationship, specifically: the impact level of the library, catering, support from the department for the satisfaction of students at private universities higher than students at public universities; In contrast, the level of impact of financial support variables and extracurricular activities for student satisfaction at public universities is higher than that of private universities. In particular, the most apparent difference is (the most gaped estimated value). It is also considered the strength of the support service of each university object shown in catering services (private university) and extracurricular activities (public university).

For geographic control variables (North, Central, and Southern), P-value is 0.026 < 5%, meaning level, the results show a difference in students’ level of satisfaction for support services between three geographic areas. The specific differential evaluation results are shown in Table 4.5.
The analysis results in the geographical control variable show that most independent variables affect student satisfaction for university support services (P-value values are small, more than 0.05). Except for some variables such as the support service relationship from the department affecting the satisfaction of students who are not statistically significant in the Northern region (P-value = 0.069, larger than 0.05). The influence of extracurricular activities for student satisfaction is also not statistically significant for universities in the Central region (P-value = 0.268, greater than 0.05). The explanation of independent variables to student satisfaction in the model of universities in the northern region is $R^2 = 32.5\%$ highest compared to the other two models in the Central region ($27.9\%$) and the South ($31.7\%$).

The result of comparing the estimated value of each relationship is shown in Table 4.5 shows the difference between each geographical area. The relationship between library service and student satisfaction shows that even if in the geographic area, there is the statistical significance (P-value less than 0.05) in which the influence of library services with the satisfaction of the most vital students in the Northern region next to South and Central. Similarly, the impact of food services on student satisfaction is statistically significant in all three geographic areas. However, the level of influence of this variable is at the central regional universities with the highest value compared to universities in the remaining two areas. For assessing the impact of financial support variables for student satisfaction, P-value results show that this relationship is statistically significant in universities belonging to all three areas. The level of influence of this independent variable in the Southern schools is the highest, followed by the Northern and Central regions. The relationship between the support variable from the department and the student satisfaction shows that this relationship is not statistically significant (P-value greater than 0.05) in the model of the subjects’ universities in the northern region. This relationship still has statistical significance in the model of the remaining two areas (Central and Southern). The impact of variable support from departments for student satisfaction at the central and southern universities is similar. In the final relationship in the research model between extracurricular activities and student satisfaction, this relationship is not statistically significant for the analysis model of the university in the central area region (P-value greater than 0.05). In the remaining two areas, this relationship still has statistical significance. The influence of the extracurricular activity variable on student satisfaction at universities in the northern and southern regions is equivalent.

Table 5
Multi-group structure analysis on the geographic area of the university

| Relationships | North          | Central         | South          |
|---------------|----------------|-----------------|----------------|
|               | ML  | P-value | ML  | P-value | ML  | P-value |
| TV => HL      | 0.216 | 0.018  | 0.181 | 0.015  | 0.209 | 0.022  |
| CT => HL      | 0.352 | 0.016  | 0.408 | 0.026  | 0.387 | 0.015  |
| TC => HL      | 0.377 | 0.011  | 0.352 | 0.021  | 0.408 | 0.015  |
| PB => HL      | 0.018 | 0.069  | 0.127 | 0.006  | 0.139 | 0.001  |
| NK => HL      | 0.181 | 0.016  | 0.017 | 0.268  | 0.196 | 0.021  |
| $R^2$         | 0.325 |         | 0.279 |         | 0.317 |         |

Source: Author’s data analysis results
5. Conclusions

The research topic has studied the theoretical basis of student satisfaction for support services; accordingly, factors related to the library, food services, financial support, support from departments, and extracurricular activities all affect student satisfaction. These are considered essential support services provided by the university and are the basis for attracting and maintaining students’ level of satisfaction in the learning process at the school. The study also mentioned the difference due to the influence of the type of university and geographic position for the relationship between the support service and student satisfaction. Therefore, the topic contributes to the affirmation of the influence of students’ satisfaction provided by the support service provided by the school. The research results also show the difference in the level of influence of factors when considering the characteristics of the type of university or geographic area. Leadership at universities can refer to these research results to improve the quality of providing support services to students, thereby enhancing competitive advantages at universities in the current context.

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