Quality in Higher Education: The Case of National Economics University

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Key words

core service, service quality, student satisfaction, supportive services, training service

Continuous quality improvement of service is a crucial factor for the existence and development of educational institutions. Clarifying and judging the importance of the service's quality factors are essential elements of quality improvement. The quality of the training services provided by universities in Vietnam have been examined by numerous pieces of research. They focused on a group of subjects, a branch of the university, a major, and assessment of student satisfaction with the use of a toolkit introduced by the MoET or by a school of the university. From these foundations, the purpose of this research is to identify the quality factors of the training service provided by the National Economics University (NEU) as a whole. Education quality is a complex concept and cannot easily be assessed by only one indicator. However, because of the timeframe and the lack of finance, we examined the service quality of NEU from the student perspective by assessing their satisfaction using the SERVQUAL model. The data collection was done by through an online survey. The empirical analysis resulted in 5 factors influencing the quality of the service, assurance, reliability, responsiveness, empathy, and tangibles. From these factors, three suggestions were made for improving the quality of the service: adjusting course structures; retraining communication skills for office staff; upgrading Wi-Fi/internet connection; optimize physical facilities usage. The research findings also have social significance, as empathy was identified as a quality factor. At the same time, the practical implications proposed for NEU's governors have equal value for state-owned universities in general.

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1. Introduction

In Vietnam, nearly 72% of all universities, institutes, and colleges (172 of 237) are state-owned (Ministry of Education and Training (MoET), 2019). State-owned universities, institutes, and colleges had operated under the strict control of MoET in terms of training curriculums and admissions, even graduates were given jobs by centrally planned decisions. Vietnamese colleges, universities and institutes were usually dedicated to a specific field with courses related to that field, instead of being multi-disciplinary. This gave rise to over-specificity in courses. In particular, courses follow an "organizational structure" in which they were further divided into (e.g., Maritime Human Resources, Agricultural

Finance, Construction Marketing, etc..). This characteristic manifested into a disadvantage in the admission and training processes of universities, institutes, and colleges both under the new management regime and in the context of globalization. In recent years, a few universities, and institutes, including National Economics University (NEU) have been given partial autonomy. Since 2015, NEU was allowed to become autonomous in activities related to organizational structure, human resources management, financial and asset management, training, and research tasks. The new management regime, advancements in information technology, and globalization made NEU's admission and training highly competitive. To thrive, NEU has undertaken strong efforts to change its curriculum, teaching language, management, and physical facilities, for the purpose of improving service quality. In 2007, the Testing and Quality Assurance Department was established as an advisory unit supporting the University's President in issuing regulations to standardize testing and assessment procedures.

The quality of the training services provided by universities in Vietnam has been examined by many pieces of research. They focused on a group of subjects (Ha & Tran, 2020), a branch of the university (Nguyen, 2020), a major (Ha & Nguyen, 2015), assessment student satisfaction using a toolkit introduced by MoET (Nguyen, 2018) or a school of the university (Pham, 2016). This research examined the quality of training service in higher education through an assessment of the overall student satisfaction with NEU's service quality, and it was done under the conditions of turbulent changes in digital technology, which have had both positive and negative impact on student satisfaction. This gave the study practical implications for NEU's governors in particular, and for state-owned universities in general.

Most of the ongoing educational reforms emphasize education quality. However, the application of total quality management (TQM) principles in higher education have been largely limited to administrative processes (Barnard, 1999). NEU's case was not an exception. The purpose of this research is to assess the quality of higher education from the consumer perspective, using the SERVQUAL model (Berry *et al.*, 1988; Berry *et al.*, 1985) to identify factors influencing the quality of the service provided by NEU. This research consists of four parts: Part one is a literature review and determination of the research model. Part two is the research methodology. Part 3 contains the findings for the empirical study of NEU student satisfaction. Part 4 consists of the discussion and conclusions for the study. The research suggested policy implications for further improvement of the quality of service provided by NEU.

2. Literature review Higher education

According to the definition provided by the World Bank, higher education is all post-secondary education, including both public and private universities, colleges, technical training institutes, and vocational schools. Higher education does not only benefits individuals but also benefits society. According to the UNESCO, higher education focuses on learning endeavors in specialized fields. It includes academic and higher vocational education.

Ouality of service

Services are often abstract, and therefore, difficult for a provider to explain and for a customer to assess. Service is distinguished from goods by its intangibility, thus, it cannot be stored and transported conventionally. However, it is not true for a number of services in the digital era. The concept of service refers to the core benefits or advantages provided to the target group. It includes sophisticated combinations of values. These values may be concrete or emotional and have different importance, some of which may be nominated as the core and others may be called "peripheral services".

It is not easy to define quality, therefore in many cases, general definitions of quality are vague and meaningless. Crosby (1979) defined quality as "conformance to specifications". Juran (1992) defined

quality as "fitness for use". Quality is relative to "processes" or "outcomes" (Oliver & Bearden, 1985). "The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs" (OECD). These general definitions of quality are not as simple as customer satisfaction. Quality means different things to different people. Education quality is therefore a complex concept and cannot be assessed by only one indicator. Seven models can form a comprehensive framework for understanding and conceptualizing quality in education from different perspectives (Cheong Cheng & Ming Tam, 1997). In higher education, there are different groups of consumers: students who purchase the services provided by education; parents who pay for their children's education; corporations who hire the students; faculties that teach students the knowledge needed to perform the job (Madu & Kuei, 1993).

Berry *et al.*, (1985) in their work on the quality of services, found 10 factors or dimensions of service quality: tangibles; reliability; responsiveness; competence; courtesy; credibility; security; access; communication; understanding the customer. Berry *et al.* (1988) reduced these factors to five: tangibles; reliability; reliability; responsiveness; assurance; empathy.

Tangibles are the physical environment in the service organization. Reliability is the company's ability to perform the promised service. Responsiveness refers to the degree of promptness and speed in the performance of said service. Assurance presents the knowledge and competence of the staff and their ability to evoke trust and confidence. Empathy represents the care, thoughtfulness, and encouragement towards individual customers.

According to Zeithaml et al. (1990), the only criteria that counts in evaluating service quality are fined by the customer. "Customer satisfaction is a result achieved when product features respond to customer needs" (Juran, 1992). Therefore, quality assessment means customer satisfaction measurement.

Berry *et al.* (1985) drew four conclusions of their study: (1) Customers assess the service quality by comparing their expectations and experience of the service after delivery. If their expectations have been met, they are satisfied, if not, they are dissatisfied. If their experiences exceed expectations, they are more than satisfied. (2) The service process and the outcome of the service influence the customers' assessment of quality. (3) There are two kinds of service quality: the quality of the normal service and the quality with which "critical incidents" are handled. (4) When problems arise, companies have to increase personal connection with customers.

3. Research methodology

The satisfaction model of quality is useful when the demands of the constituencies are compatible and cannot be ignored (Cheong Cheng & Ming Tam, 1997). Because of the timeframe and lack of finance, this research applied this model to assess the quality of the service provided by NEU.

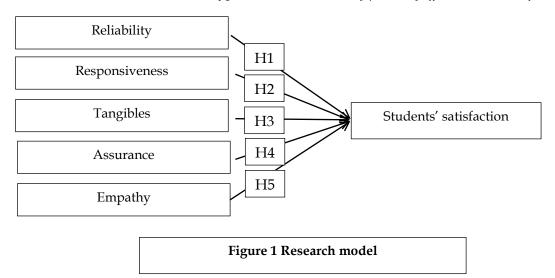
Based on reviewed theoretical models for assessing a customer's satisfaction with the quality of service, we conducted group discussions, interviewed students to build the survey questionnaire including items relevant to the service provided by NEU. The core service is the training service; The peripheral services are supportive services. The questionnaire consists of two parts, the first part includes demographical questions, the second part includes questions relating to 5 factors influencing student satisfaction: *Reliability* (includes 5 variables representing the service provision as committed), *Responsiveness* (includes 9 variables, representing handling critical incidents and students' complaints), *Assurance* (includes 15 variables representing the university's training curriculums, learning materials, teachers' and staff's competence), *Empathy* (includes 5 variables representing the university's ability to provide a caring and individualized attention), and *Tangibles* (includes 9 variables representing the university's physical facilities). The questionnaire also includes one open question for respondents to express their opinions if they differed from what was listed. The scale of student satisfaction includes 3

variables. The respondents are requested to react to the statements on the scale with five intervals ranging from "do not agree at all" to "fully agree".

Research model and hypothesis

Based on the literature review made, we advance the research model which includes 5 key quality factors influencing student satisfaction as shown in Figure 1.

Reliability is the university's ability to perform the promised service dependably and accurately. The student wants to feel that he/she can rely on the service being provided as agreed. Clear and informed training curriculum, major accompanied with job opportunities, and tuition fee contribute to student satisfaction. The closer what a university does to what has been informed to the student, the higher the student satisfaction. Thus, we make the first hypothesis (H1): Reliability positively affects student satisfaction.



Responsiveness is the university's willingness to help students and provide prompt service. This mean professionally handling critical incidents and student complaints. Incidents often occurred in online credit registration technicals, implementation of social policies for student, and assessment of learning outcomes. The professional handling of critical incidents and student complaints is a means of improving students' perception of quality. Thus, the second hypothesis (H2): Responsiveness positively affects the student satisfaction.

Tangibles represent the appearance of the university physical facilities, equipment, and communication materials. The university is expected to provide enough learning materials, ensures library and classrooms are equipped with modern technology, and parking spaces. So, the third hypothesis (*H*3): *Tangibles positively affect the student satisfaction*.

Assurance means the university staff's ability to inspire confidence and give the student the feeling that they are trustworthy and reliable as suppliers that competent and capable of delivering the desired service. Regarding core service of the university, this implies the professor's knowledgeability, the accuracy of curriculum content, concern for students, instruction medium, social activities, and assessments. Therefore, the fourth hypothesis (H4): Assurance positively affects student satisfaction.

Empathy refers to an interest in the student. It represents the university staff's ability to provide caring and individualized attention to students. This factor means personal attention and consideration. The student wants to receive enthusiastic guidance from academic and office staffs. Thereby, the fifth hypothesis (*H5*): *Empathy positively affects the student satisfaction*.

Data description

To avoid the spread of Covid-19, and save costs, the online survey was conducted in July and August 2020. 1411 responses were received, all valid for analysis. The data collected were screened and processed by SPSS 25 software.

A large part of the sample was female, 75%. Most of the respondents were second- and third-year students, 40% and 47% respectively. This is because the survey was conducted when first-year students not entered yet as a result of the Covid-19 pandemic. 80% of respondents reacted that they chose studying at NEU by themselves, 14% of respondents' decisions were affected by their friends, and the rest were affected by their parent's orientation. 96% of respondents were normal full-time students. The NEU training programs also includes other smaller sized with higher tuition fees, with English as the teaching language. Only 12% of respondents had lived on the NEU campus. 66% of respondents had a part-time job. 25% of respondents were members of clubs. The family residence of 56% of respondents was in the rural area. 74% of respondents' studies had been financed by their parents, the rest was self-financed.

4. Findings

Test of reliability of scales

Reliability test of the 5 scales resulted in all 43 variables having item-total correlation > .3 and Cronbach's Alpha > .6 (Table 1) Thus all were accepted for further analysis.

Scale **Items** Cronbach's **Items** Results Alpha coefficient deleted Reliability 5 .820 5 items, all Corrected Item-Total Correlations > 0.3, Cronbach's Alpha > 0.5 9 items, all Corrected Item-Total Correlations > 0.3, 9 .883 0 Responsiveness Cronbach's Alpha > 0.5 9 items, all Corrected Item-Total Correlations > 0.3, 15 .929 0 Assurance Cronbach's Alpha > 0.5 5 .844 0 5 items, all Corrected Item-Total Correlations > 0.3, **Empathy** Cronbach's Alpha > 0.5 **Tangibles** 9 .871 9 items, all Corrected Item-Total Correlations > 0.3, Cronbach's Alpha > 0.5

Table 1. The results of reliability test

Source: extracted from the processed data by authors

Exploratory Factor Analysis (EFA)

Test of Sampling Adequacy and Sphericity was used. The KMO were .977, which satisfied the 0.5 < KMO < 1 requirement; Bartlett's Test of Sphericity is 35153.088, sig. = .000. The total variance explained was 58.388%. The Rotation Method was Varimax with Kaiser Normalization, Rotation converged in 10 iterations, 6 components with Eigenvalues > 2.408 were extracted. None of the 43 variables belonged to more than one component, ensuring Convergent validity and Discriminant validity. All Factor loadings are > 0.5 (Table 2).

43 observed variables that belonged to 5 aforementioned factors were transformed into 5 components as follows. The first factor (ASS) represents assurance of the training service's quality. This contains teachers' competence, discipline, measurement of student learning outcome, learning materials, library, and physical facilities for learning and teaching. Thus, this factor is named "Assurance, both soft- and hardware". The second factor (REL), Reliability, contains 4 of 5 variables of the initial factor. The third factor (RES), Responsiveness, contains 4 of 9 variables of the initial factor. The fourth factor (EMP), Empathy, contains 4 of 5 variables of the initial factor. The fifth factor (TAN), Tangibles, reflects physical

facilities for internet connection, parking space, and campus. The sixth factor contains only one variable reflecting NEU curriculum, so it is excluded. Conventionally, this variable would be included because universities and institutes in Vietnam are not allowed to remove some subjects imposed by MoET from their curriculum even if they were not practical (Table 2).

Table 2. Factors influencing NEU student satisfaction

ASS (Class time and course schedule are well performed)	Table 2. Factors influencing NEU student satisfaction Computed Factors	Factor loadings
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ASS8 (Teachers provide enough study materials) ASS9 (Teachers have broad knowledge of the modules they teach) ASS9 (Teachers have broad knowledge of the modules they teach) ASS91 (Teachers use IT resources combined with appropriate teaching methods) ASS11 (Teachers encourage students' creative and active learning) ASS11 (Teachers provide interesting and attracting lectures) ASS12 (Teachers provide interesting and attracting lectures) ASS13 (The assessment method reflects the acquired knowledge accurately) ASS13 (The assessment method reflects the acquired knowledge accurately) ASS13 (The assessment method reflects the acquired knowledge accurately) ASS13 (The assessment of students' learning outcomes are fairly and unbiased) ASS14 (Teachers' assessment of students' learning outcomes are fairly and unbiased) ASS15 (Modules have reasonable score structures) BMP1 (I am enthusiastically guided and answered by teachers) ASS16 (Modules have reasonable score structures) EMP1 (I am enthusiastically guided and answered by teachers) ASS17 (The library meets your learning needs in terms of materials, space, and service time) ASS18 (The library meets your learning needs in terms of materials, space, and service time) ASS18 (The library meets your learning needs in terms of materials, space, and service time) ASS18 (The library meets your learning needs in terms of materials, space, and service time) ASS18 (I am well informed accurated the learning needs of students) ASS18 (I am allowed and a Training) ASS18 (I am allowed and Training) ASS18 (I am allowed in informed about majors and job opportunities after graduation) ASS18 (I am allowed in deciding "optional" subjects myself) ASS6 (I am allowed in deciding "optional" subjects myself) ASS6 (I am allowed in deciding "optional" subjects myself) ASS6 (I get prompt support when my credit registration goes wrong) ASS6 (I get prompt support when my credit registration goes wrong) ASS6 (I get prompt support when there are errors in the course evaluation results) ASS8 (I get prom		671
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Source: extracted from the processed data by authors

Correlation analysis

All Pearson Correlations were significant at the 0.01 level (2-tailed). The largest correlation coefficient is .750 showing no collinearity (Table 3). Thus, those variables were accepted for regression analysis.

Tab1	~ 2	Cours	lations
Lani	e 3	(orre	lations

	Table 3	6. Corre	lations
SAT1	SAT2SAT3ASS	REL	RES EMPTAN
SAT1Pearson Correlat	ion1		
Sig. (2-tailed)			
N	1411		
SAT2Pearson Correlat	ion.593**1		
Sig. (2-tailed)	.000		
N	1411 1411		
SAT3Pearson Correlat	ion.678**.750**1		
Sig. (2-tailed)	.000 .000		
N	1411 1411 1411		
ASS Pearson Correlat	ion.658** .747** .739**1	1	
Sig. (2-tailed)	.000 .000 .000		
N	1411 1411 1411 1	1411	
REL Pearson Correlat	ion.516** .640** .621**.	738**1	
Sig. (2-tailed)	.000.000.000.	000	
N	1411 1411 1411 1	1411 141	1
RES Pearson Correlat	ion.464** .566** .567**.	678**.657	7**1
Sig. (2-tailed)	.000 .000 .000 .	000.000)
N	1411 1411 1411 1		
EMP Pearson Correlat	ion.477** .589** .588**.	725**.611	**.636**1
Sig. (2-tailed)	.000 .000 .000 .	000.000	.000
N	1411 1411 1411 1		
TAN Pearson Correlat	ion.431** .383** .465**.	481**.390)**.500**.495**1
Sig. (2-tailed)	.000 .000 .000	000.000	000. 000.
N	1411 1411 1411 1	1411 141	1 1411 1411 1411
** C 1 (: :	: :::		

^{**.} Correlation is significant at the 0.01 level (2-tailed).

Source: extracted from the processed data by authors

Regression analysis

Running regression by OLS, the dependent variables were satisfaction (SAT1, SAT2, and SAT3) and the independent variables were ASS, REL, RES, EMP, and TAN. The method used was Stepwise; Criteria: Probability-of-F-to-enter is less or equal to .05; Probability-of-F-to-remove is more or equal to .10. Regression results were summarized in Table 5, Table 6, and Table 7.

Firstly, running regression for SAT1 resulted in two independent variables, ASS, and TAN, which have sig.t < .05 and expected sign. This means the relationship between student satisfaction and assurance; tangibles were statistically significant. The model has sig. F < .05 showing that it fitted the data. Three factors REL, RES, and EMP reflect the "software", so they were not present in the model. The adjusted R Squares of the model is .449 which means 45% variances of the dependent variable were explained by variances in the independent variables (Table 4).

Table 4 Model summary

	Standardized Coefficients		Adjusted R Square	Sig. F	
	Beta	T	Sig.		
(Constant)		4.723	.000		
ASS	.587	26.025	.000	.449	.000
TAN	.149	6.599	.000		

Dependent: SAT1

Source: extracted from the processed data by authors

Secondly, running regression for SAT2 resulted in three independent variables (ASS, REL, and EMP) have sig. t < .05 and they have expected sign, which means the relationship between student satisfaction and assurance, reliability and empathy were statistically significant. The model has sig. F < .05 showing that the model fitted the data. In this model, factor RES, and TAN were absent. This fact may be interpreted as follows. From the student's point of view the quality of NEU training service mainly determined by assurance (both software and hardware), reliability, and empathy. The adjusted R Square of the model is .577 which means approximate 58% of variances of dependent variables are explained by variances in independent variables (Table 5).

Table 5. Model summary

	Standardized Coefficients		Adjusted R Square	Sig. F	
	Beta	T	Sig.		
(Constant)		189	.850		
ASS	.561	18.770	.000		.000
REL	.182	6.997	.000	.577	
EMP	.072	2.815	.005		

Dependent: SAT2

Source: extracted from the processed data by authors

Thirdly, running regression for SAT3 (the overall satisfaction) resulted in three independent variables (ASS, TAN, and REL) having sig. t < .05 and expected sign, this shows that hypotheses H1, H5, and H2 were accepted, while factors RES and EMP did not appear in this model so hypotheses H3 and H4 were rejected. The model has sig. F = 0.000 showing that it fitted the data. The adjusted R Squares of the model is .572 which means 57% variances of the dependent variables are explained by variances in the independent variables.

Table 6. Model summary

				· ·)	
	Standa	rdized Coefficients		Adjusted R Square	Sig. F
	Beta	T	Sig.		
(Constant)		1.008	.314		000
ASS	.559	20.587	.000	.572	
TAN	.136	6.808	.000		
REL	.155	6.005	.000		

Dependent: SAT3

Source: extracted from the processed data by authors

Compare mean

To compare the mean of the satisfaction levels among groups, the controlled variables were included in the regression equation as independent. The regression result showed that equality of mean was observed among groups by gender, study year, studying choice, program, campus, occupational status, and club membership. Equality of mean was not observed among groups by family residence (variable FR, sig. t = .019) (Table 7).

Table 7. Summary of model

	Standardized Coefficients		Adjusted R Square	Sig. F	
	Beta	T	Sig.		
(Constant)		023	.982		
ASS	.557	20.422	.000		
TAN	.135	6.775	.000	.572	0.000
REL	.155	5.947	.000		
FR	.041	2.352	.019		

Source: extracted from the processed data by authors

The group whose family lived in a rural area had a higher mean of satisfaction, 3.79, than that of the group whose family lived in an urban area, 3.67 (Table 8).

Table 8. Mean of the overall satisfaction (SAT3)

Family residence	Mean	N	Std. Deviation
Urban	3.67	619	.862
Rural	3.79	792	.771
Total	3.74	1411	.815

Source: extracted from the processed data by authors

5. Discussions and conclusions

The quality of service offered by NEU both in terms of physical facilities and training aspects was influenced the most by Assurance. Reliability affects student satisfaction both in terms of physical facilities and training quality. Surprisingly, Responsiveness does not affect either of the above-said aspects of the overall satisfaction of NEU's students.

The NEU training quality, core service, has been determined by three factors: Assurance, Reliability, and Empathy while the overall quality of the service provided by NEU has been influenced by 3 factors: Assurance, Tangibles, and Reliability.

Assurance have been established to be the most influential factor towards NEU's service quality, however, items which were previously assumed to be important were not present in the analysis. These (ASS1 to ASS5) were: "rational curriculum, including compulsory and optional subjects"; "subjects in curriculum are complements"; "a few impractical subjects in major"; "no overlap between subjects"; "upto-date textbook and learning materials were provided". From the professors'/lecturers' perspective these were considered to be essential to educational quality. It could be argued that the knowledge gap between students and professors contributed to the exclusion of these factors. The students were not as well-educated as their professors, thus, might not have been able to see the bigger picture of their entire curriculum. This differed from findings of previous research, which argued that curriculum was the most important factor influencing service quality in higher education (Ha & Nguyen, 2015; Ha & Tran, 2020; Pham, 2016).

Similar to the findings of previous research (Ha & Nguyen, 2015; Ha & Tran, 2020; Nguyen, 2020; Nguyen, 2018; Pham, 2016), tangibles were also found out to be a significant predictor of students' perception of quality in higher education.

In this research, reliability has been established to be one of three key factors determining the service quality from NEU. This was not the case in the other research on NEU's service quality we have mentioned. However, the research done by Ha and Nguyen (2015) have pointed out "Reputation" as a determining factor, to which our concept of "Reliability" bears similarities.

The NEU's student satisfaction in any aspect and any group did not exceed the value of 4.0. However, 86% of respondents revealed that if they were allowed to make a studying choice, they would have studied at NEU again, and recommend it to their friends and relatives to study there.

Basing on the findings, suggestions for improving the quality of service are provided, which also are increasing student satisfaction, and NEU should undertake the improvement of quality of the core service and supportive ones simultaneously.

Firstly, regarding core service, course structures should be adjusted. Respondents revealed that modules with practical value only occupy a small volume, compared to modules with only theoretical values. Therefore, NEU should strengthen cooperation with businesses and other organizations in order to secure internships for its students, as a means to increase practicality without disrupting the current foundational theory-based modules. Students expressed that it was hard to find printed textbooks at NEU's bookstore. NEU should provide enough learning materials by supplying up-to-date books for its library and gathering bookselling points into one clue instead of scattering as in the present.

The data showed that students who financed their studies together with their parents were more satisfied. Thus, to encourage students to take up a part-time job, the class schedule should be more streamlined. With a more reasonable class schedule, students can arrange their time reasonably.

Regarding testing and assessment of student learning outcome, the exams of subjects belong to majors should take essay form instead of multiple-choice test thereby students will have chances to express their creativity and critical thinking.

Secondly, regarding supportive services, NEU should provide communication skill courses for faculty assistants and staff of various departments: training management, student management, campus, parking, etc., in case "critical incidents" are handled by them. Unenthusiastic learning advisors, faculty assistants, guards, parking guards may create an unpleasant impression for students. The data exposed the lack of enthusiasm from the staff. Students want the staff to keep continuous contact and prompter and quicker exam review with more clarity when results are claimed.

It would be better to give 2 separate scholarships for academic merit and for taking part in various activities. This may help those students who claimed that tuition fees were quite high.

Thirdly, regarding physical facilities, NEU should upgrade Wi-Fi/internet connection; provide free drinking water; parking should have a roof and be rearranged to avoid congestions; ensure clean and quiet campus (relocate physical education activities).

6. Limitations and direction for future research

This research investigated only NEU student satisfaction, so the policy implications were suggested for NEU and may be applied to state-owned universities. Data was collected in a short time, about 2 months, so only regular students responded, the conclusions may be different if part-time students and post-graduates were involved. Further research will extend the scope and perspectives to other constituencies.

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