

FACTORS INFLUENCE STUDENT SATISFACTION IN PHARM EDUCATION PROGRAM: A CASE STUDY IN PRIVATE UNIVERSITIES IN VIETNAM

FATORES QUE INFLUENCIAM A SATISFAÇÃO DO ALUNO NO PROGRAMA DE EDUCAÇÃO FARMACÊUTICA: UM ESTUDO DE CASO EM UNIVERSIDADES PRIVADAS NO VIETNÃ

FACTORES QUE INFLUYEN EN LA SATISFACCIÓN DE LOS ESTUDIANTES EN EL PROGRAMA DE EDUCACIÓN FARMACÉUTICA: UN ESTUDIO DE CASO EN UNIVERSIDADES PRIVADAS EN VIETNAM

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ABSTRACT: In the Industrial Revolution 4.0 (IR 4.0), the role of higher education (HE) stays crucial for the development of highly skilled human resources in the multi-service sector. Indeed, the pharmaceutical education quality in higher education is significant for building a quality workforce in the healthcare service sectors. Additionally, the increasingly global education market required the ongoing increase of quality in higher education. This study investigates the driving factors of student satisfaction in Pharmacy education at private universities in Vietnam. Both qualitative and quantitative approaches are used in this study. For quantitative research, the surveyed questionnaire is developed and is the primary instrument. Besides, focus groups, semi-structured in-depth interviews with experts, and meta-analysis are applied instruments for qualitative research. The sample is 265 students from 3 private universities. The driving factors of student satisfaction are (1) Educational program, (2) University Reputation, (3) Business Interaction, (4) Extracurricular activities, and (5) Teaching facilitators activities. Eventually, the authors propose the suggestions for both academic and practical perspectives; simultaneously, the limitation is discussed for further research.

KEYWORDS: Service quality. Higher education. Performance measurement (quality). Pharmacy.

RESUMO: Na Revolução Industrial 4.0 (RI 4.0), o papel do ensino superior (ES) permanece crucial para o desenvolvimento de recursos humanos altamente qualificados no setor de multisserviços. De fato, a qualidade da educação farmacêutica no ensino superior é significativa para a construção de uma força de trabalho de qualidade nos setores de serviços de saúde. Além disso, o mercado de educação cada vez mais global exige o aumento contínuo da qualidade do ensino superior. Este estudo investiga os fatores que impulsionam a satisfação dos alunos no ensino de Farmácia em universidades privadas no Vietnã. Tanto a abordagem qualitativa quanto a quantitativa são utilizadas neste estudo. Para pesquisas quantitativas, o questionário pesquisado é desenvolvido e é o principal instrumento. Além disso, grupos focais, entrevistas semiestruturadas em profundidade com especialistas e meta-análises são instrumentos aplicados para a pesquisa qualitativa. A amostra é de 265 alunos

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de 3 universidades privadas. Os fatores que impulsionam a satisfação do aluno são (1) Programa educacional, (2) Reputação universitária, (3) Interação nos negócios, (4) Atividades extracurriculares e (5) Atividades de facilitadores de ensino. Eventualmente, os autores propõem as sugestões para perspectivas acadêmicas e práticas; simultaneamente, a limitação é discutida para pesquisas futuras.

PALAVRAS-CHAVE: *Qualidade do serviço. Ensino superior. Medição de desempenho (qualidade). Farmácia.*

RESUMEN: *En la Revolución Industrial 4.0 (IR 4.0), el papel de la educación superior (ES) sigue siendo crucial para el desarrollo de recursos humanos altamente calificados en el sector multiservicio. De hecho, la calidad de la educación farmacéutica en la educación superior es importante para construir una fuerza laboral de calidad en los sectores de servicios de salud. Además, el mercado de la educación cada vez más global requiere el aumento continuo de la calidad en la educación superior. Este estudio investiga los factores impulsores de la satisfacción de los estudiantes en la educación de farmacia en universidades privadas en Vietnam. En este estudio se utilizan enfoques tanto cualitativos como cuantitativos. Para la investigación cuantitativa, el cuestionario encuestado se desarrolla y es el instrumento principal. Además, los grupos focales, las entrevistas en profundidad semiestructuradas con expertos y el metanálisis son instrumentos aplicados para la investigación cualitativa. La muestra es de 265 estudiantes de 3 universidades privadas. Los factores que impulsan la satisfacción de los estudiantes son (1) Programa educativo, (2) Reputación universitaria, (3) Interacción empresarial, (4) Actividades extracurriculares y (5) Actividades de facilitadores docentes. Finalmente, los autores proponen las sugerencias tanto para perspectivas académicas como prácticas; simultáneamente, la limitación se discute para futuras investigaciones.*

PALABRAS CLAVE: *Calidad del servicio. Educación superior. Medición del desempeño (calidad). Farmacia.*

Introduction

Today, humankind is involved in a radical transformation of the Industrial Revolution 4.0 (hereinafter referred to as IR 4.0), in which developments and uncertainties coexist. Indeed, the negative impact of the global pandemic COVID-19 creates an unprecedented threat in humankind's society that exhausts the healthcare system in nations. Additionally, universities have made great efforts to support the healthcare system in coping with critical circumstances; simultaneously, the far-sighted objectives are attained to shape the further development of education in healthcare sectors (BASHETI *et al.*, 2021). Hence, a study in Australia's higher education, the pharmaceutical education program is adjusted by adding vaccination training and practices in the Bpharm's curriculum since epidemic prevention is a crucial factor for the safeness of human civilization (BUSHELL *et al.*, 2019). Apart from that,

a pharmacist creates an influence on patients' psychological state and pharmaceutical education (BASHETI *et al.*, 2021). Primarily, the perceived role of the professional pharmacist is associated with pharmaceutical care, such as effectively providing medications (ABUSHAM; AL-HARTHY, 2018). Regardless of the importance, pharmacists' performance is distinctively reflected in developing countries following the educational level; for instance, a distinctive gap is perceived between university and college students in pharmacy education (NGUYEN; DINH; NGUYEN, 2021). Indeed, in IR 4.0 era, the global market is required the increasing quality of human resources in most industries; hence, the higher education role is reconciled, which greatly influences the transformation. Significantly, the quality of Pharmacy education is perceived as one of the significant for the substantial development of a healthcare system. As a result, higher education institutions are interrelated to enhancing educational quality, whereby student satisfaction is accepted as the influential factor (ELLIOTT, 2002; TANDILASHVILI, 2019). The increasing impact of student satisfaction is due to the concept of service implication in higher education, which is associated with customer-centric or customer-driven orientations. Accordingly, students are conceived as crucial stakeholders of higher education service, whereupon students' needs and desires are prioritized to fulfill. Also, higher education is driven by marketization and globalization, in which the competition among educational institutions is rapidly elevated. As such, student satisfaction is afforded considerable research concerns academically and practically in the responsiveness of changing market demand (TESSEMA; READY; YU, 2012). Also, BPharm students' feedback is related to strengthening educational quality in Pharmacy Program (ABUSHAM; AL-HARTHY, 2018).

In Vietnam, a surging establishment of private universities results in intensified competition in higher education due to the government's socializing education policy. In this circumstance, higher education institutions (hereinafter referred to as HEIs) strive to build up competitiveness to survive the competition (TRUONG; PHAM; VO, 2016; DOAN, 2021). Hence, universities strive to create significant investment into infrastructure, concurrently redefining the quality term following student-centric orientation. Furthermore, private universities make a crucial investment in multi-facets, aiming to satisfy the current students and persuade the potential students. The development of private universities offers more educational opportunities students, also raise quality concern for key stakeholders (i.e., government, researchers, and parents). Significantly, higher education quality and its relatedness are analyzed in studies, from which suggestions and recommendations are proposed to enhance the performance of higher education institutions. For Pharmacy

education in Vietnam, 5 primary career prospects are recognized, including management and distribution of medicine, medical innovation and processing, clinical pharmaceutical practitioners, traditional medicine, and quality control in pharmacy (VO *et al.*, 2013). Additionally, Vo *et al.* (2013) depict that a qualified pharmacist is required to have a university degree or higher, and a standard university curriculum for pharmacy is 5-year full-time. In studies, higher student satisfaction is analyzed (TRUONG; PHAM; VO, 2016; PHAM *et al.*, 2019; CHEN; CUONG, 2020); however, limited studies focus on the student's satisfaction with BPharm in private universities. Therefore, this study's focus depicts student satisfaction in Pharmacy programs at private universities. For contribution, the authors aim to propose the improvement for the educational quality of BPharm education. Nonetheless, this paper creates a contribution to the knowledge of tertiary education quality.

Literature reviews

Quality in higher education

In a different context, the notion of quality is determined differently, including purpose fitness, reliability, sustainability, aesthetics, etc.; as a result, quality is accepted as a complex and multi-dimensional concept (BOGUE, 1998). According to Ngoc (2008), the attainment of objectives that fulfill societal development. Furthermore, the notion of quality is associated with exceptional, error-free, and the fitness of customer's preference, standard, value for money, and ongoing improvement and innovation (TRAN; LEWIS, 2012). Hence, in higher education, the fitness of objective in building up social responsibility awareness is associated with quality evaluation (BRUBACHER 1982; CHINH, 2000). Besides, higher education quality is interpreted as a process of knowledge creation and transfer, whereupon producing quality human resources for the improvement of the global workforce (MALCOLM, 1994; LEE, 2017). Accordingly, fitness for educational objectives is accepted as the primary consideration for students, in which the improvement in knowledge, skills, and attitudes are determined factor quality in higher education (KILOVA, 2020). Significantly, fulfillment of students' needs and desire for development crucially impacts the quality of universities. Indeed, the educational quality relies on the students' preference and evaluation since a satisfied student is fulfilled by objectives and is perceived as a university's efforts (WANG; SUN; JIANG, 2018). Furthermore, the performance of the workforce is used as the evaluative criteria for higher education; however, this evaluation might have been overestimated since the workforce performance is also accepted the influenced by other

factors. In a study by Bogue and Saunder (1992), quality is defined by acceptable standards regarding public evaluation and affirmation, which is depicted by the universities mission statement and attainable objectives. Thus, the concept of a high-quality university is interconnected with the determined mission statement and quality-driven objectives, which greatly influence the output performance (GREEN, 1994). In Vietnam, the quality of graduate students is required to achieve ethics, knowledge, skill comprehension, and proper attitudes, in turn determining the higher education quality. Indeed, the quality of higher education is still product-oriented appreciation in Vietnamese society (TRUONG; PHAM; VO, 2016). As per the concept, quality is related to the output of the educational process and is determined by learners' capability in the workplace. In line with that, higher education has the excellent quality, consistency, and perfection; objective fitness; value for money; transformation value; and value-added creation (HARVEY; GREEN, 1993). Therefore, the transformation of higher education quality is accepted from elite to broad-based perspective (TURNER, 2011).

Concept of Student Satisfaction

As known, higher education quality is related to various stakeholders' perspectives, including students, parents, teachers, and employers (CHUA, 2004). Of which assertion, students are conceived as a key stakeholder who is perceived differently from a commercial service customer (KAMVOUNIAS, 1999). In studies, the positive correlation between service quality and satisfaction of customers is determined in various sectors (DE RUYTER *et al.*, 1997; BRADY; ROBERTSON, 2001). In relation to the mentioned point, *Aga and Safakli*, (2007) confirm that customer satisfaction is exerted by service quality, company image, and service price. Indeed, customer satisfaction is ascribed as an individual's sensory state referring to the difference between purchased products (i.e., goods and/or services) and predetermined expectations (KOTLER, 2001). The predetermined expectations consume the influence from personal needs, prior experience, and external information sources (i.e., advertising, family and friends, internet, etc.). Additionally, customers' responsiveness toward the difference between requisite expectation and actual receive crucially influences satisfaction level (TSE; WILTON, 1988). More of that, Brown (1992) asserts that customer satisfaction is connected to individuals' needs, wants, and expectations, which is explicated by positive satisfaction when the post-purchased value exceeds the requisite expectation; as a result, repurchase, customer loyalty, and better word-of-mouth is recognized. In line with that, customer satisfaction relied on the level of needs fulfillment regarding a specific product

and/or service (ZEITHAML; BITNER, 2000). Thus, the concept of customer satisfaction is restricted to individual viewpoints. Therefore, the affirmed contribution of customer satisfaction is to build up enterprise competitiveness by influencing service quality, so forth customer loyalty.

The HEdPERF model of quality measurement

As the above discussion, student satisfaction is crucially perceived as one of the influential factors driving educational service quality. Also, along with service sectors development, many models are constructed and applied to measure the multi-facets of service, including the SERVQUAL model, SERVPERF, and HEdPERF. Hence, SERVQUAL is developed by Parasuraman, Zeithaml and Berry (1988), and the model depicts the concept of quality in five dimensions of service firm and unfolds the five service gaps. By adapting the SERVQUAL conceptual framework, Cronin and Taylor (1992) assert the better measurement scale, which is accepted as a performance-driven approach. Both SERVQUAL and SERVPERF have analyzed a service firm in five dimensions following (1) Empathy, (2) responsiveness, (3) Trust, (4) Tangibility, (5) Service capacity following the SERVQUAL model. In studies, the two models are applied in measuring the educational quality of educational institutions (SNIPES; THOMSON, 1999; LONG 2006; KIEN, 2008; LUONG, 2011). However, in higher education, limitations are unfolded in the models that the improvement of findings raises the research concerns, leading to the further development known as HEdPERF. Indeed, HEdPERF is purposefully developed to measure the quality of higher education, which is perceived to offer a better measurement scale including 6 dimensions and 41 components (ABDULLAH, 2006a). According to Abdullah (2006b) higher education is accepted as a sophisticated service that necessitates performance-driven measurement, whereby the inclusion of non-academic and academic assessment is considered crucial. Accordingly, the HEdPERF indicates 6 dimensions, including (D1) non-academic aspects (i.e., student life, student support service, career counseling, etc.); (D2) academic aspects (i.e., curriculum, academic references, academic supports, etc.); (D3) Reputation (i.e., university ranking, achievement, high graduate employment rate, etc.); (D4) Access (i.e., availability of service, convenient campus, modern facilities, etc.); (D5) Program issue (i.e., lesson structure, knowledge delivery, updated content, etc.); (D6) Understanding (i.e., analysis of students' needs, empathize with students, wholehearted supports for student, etc.). In studies, the HEdPERF model is accepted as suitable for higher education quality

measurement (ABDULLAH, 2006b; KHALID; ALI; MAKHBUL, 2019). Therefore, the HEdPERF framework is adapted to direct the determining factors that influence student satisfaction in this study.

Factors affecting student satisfaction

Educational program

In education, the quality of the educational program is perceived as the influential determinant which indicates the teaching approaches, content, and expected outcomes (DI GREGORIO; BEATON, 2019). Accordingly, the educational program is connected with a student learning experience, from which students evaluate the worth for the study program, resulting in high/low satisfaction levels (KIRMIZI, 2015). Therefore, the attractive educational program has an influence on student satisfaction.

H1: Educational program influences BPharm student satisfaction on educational quality

University reputation

University reputation is connected to various elements, including image, ranking, and educational program. Indeed, universities strive to build a preferable image that attracts more students and enhances student satisfaction towards universities (OSMAN, & SAPUTRA, 2019). Also, According to Djafri, Meguellati & Omar (2013), service quality and institution image are interconnected, and the positive image results in increased student loyalty.

H2: University reputation impacts Bpharm student satisfaction with the educational quality

Business interaction

Business interaction is accepted as an influential factor for higher education since the collaboration with business benefices educational institutions in various aspects (NECHEUKHINA *et al.*, 2017). For instance, internship arrangement, professional consultancy, and employment insight are perceived as significant for both sides. Pharmacy education, practicum, and/or clinical internship in a hospital, pharmaceutical company/organization are significant for pharmaceutical students and are the compulsory condition before becoming a qualified pharmacist (VO *et al.*, 2013). Hence the business

interaction influences student satisfaction with educational quality. According to Necheukhina *et al.* (2017), the interaction between business and educational institutions provides the student with practical engagement and career prospect development.

H3: Business interaction influences BPharm student satisfaction with the educational quality

Extracurricular activities

As known, the formal curriculum provides the student with academic knowledge and skills. Besides, students are encouraged to develop more life skills, employability skills, and social skills by participating in extracurricular activities. In a study, Letcher & Neves (2010) confirms that extracurricular activities are appreciated by higher education students and have a crucial contribution to increased student satisfaction. Additionally, extracurricular activities are the contributors to students' encouragement in studying, resulting in better academic performance and satisfaction (BAKOBAN; ALJARALLAH, 2015).

H4: Extracurricular activities influences Bpharm student satisfaction with the educational quality

Teaching facilitators quality

According to studies, teaching facilitators' roles are recognized as significant elements of higher education quality. Teaching facilitators are primarily engaging in supporting student self-development. Indeed, the quality of the lecturer is related to the distinctiveness in pedagogical approaches and professional knowledge and is effectively transmitting knowledge to the student. As such, the relationship between lecturer quality and educational quality in higher education is confirmed (SAVAGE; BIRCH; NOUSSI, 2011; GIAO; LIEN, 2021)

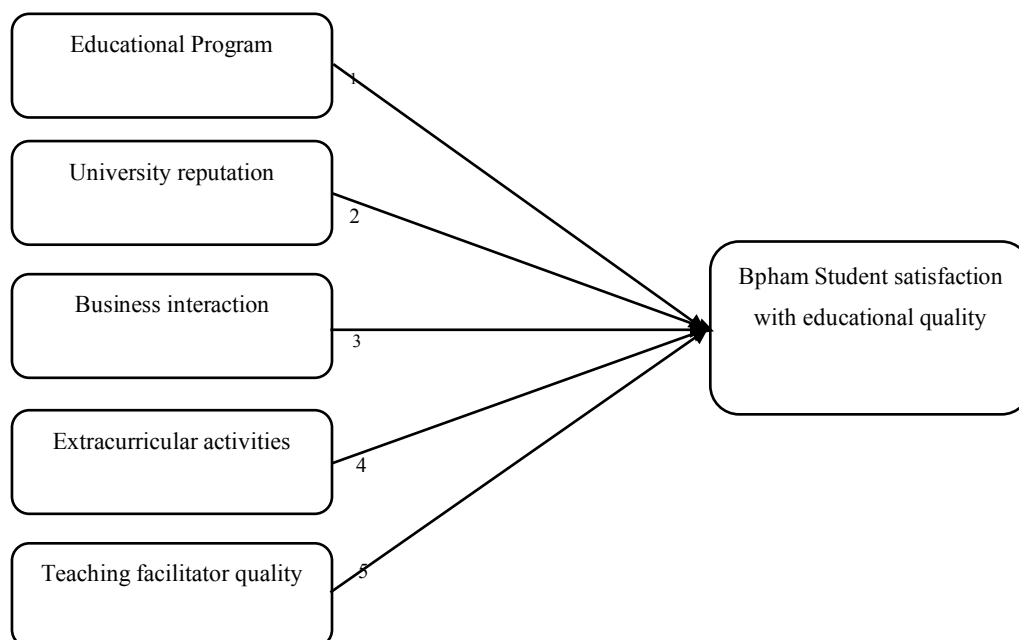
H5: Teaching facilitator impacts BPharm student satisfaction with the educational quality

The proposed research model

As above depiction, the authors propose five independent factors influencing on BPharm student satisfaction with educational quality, including (1) Educational program, (2) Universities reputation, (3) Business interaction of universities, (4) Extracurricular activities,

and (5) teaching facilitator quality. As such, the authors proposed the research model as follows.

Figure 1 – The proposed model



Source: Prepared by the authors

Methodology

The study is applied both qualitative and quantitative research methods for collecting primary and secondary data. For the qualitative research, the authors have done 3 focus groups and 7 in-depth interviews with experts from Medicine and Pharmacy Faculty in different universities, who are the Dean/Unit-Chair/Senior Lecturers. As a result, the authors strive to unearth pharmaceutical education's outlooks and probe deeply to uncover the underlying knowledge. Furthermore, the authors randomly interview 20 students from 3 universities, who are pharmaceutical students, to acknowledge the students' viewpoints upon educational quality. For the quantitative approach, authors develop a questionnaire for survey research by adapting from previous studies (TRAN; LEWIS, 2012; LE, 2015; LIEN, 2016; VIET, 2017), significantly, the draft questionnaire is submitted to university professor for revision, and minor adjustment is made. For readability and understandability, the authors have conducted the pilot test with 10 students, and as a result, the questionnaire is highly readable and understandable. Following that, the questionnaires that have been administered received 269 responses (96.4%), from which 265 valid responses are determined after

excluding invalid responses. And valid data has been processed for analysis using SPSS version 22.

Findings and Discussion

According to the result, 137(51.70%) female participants have been recognized, whereas 128 male participants (48.31%) are involved. Additionally, the distribution of students regarding year-of-learning is at a low variant; indeed, the 4th year and 2nd year students are most recognized in this sample size. Additionally, the study has been conducted in 3 private universities in Ho Chi Minh City, including Ho Chi Minh City University of Technology (HUTECH), Nguyen Tat Thanh University (NTTU), and Hong Bang University (HBU).

Table 1 – Sample Characteristic

	Count	Ratio
Gender	N=265	100%
Male	128	48.31
Female	137	51.70
Year of learning	N=265	100%
1 st year	57	21.5
2 nd year	48	18.12
3 rd year	63	23.78
4 th year	70	26.42
5 th year	27	10.19
Educational Institution	N=265	100%
HUTECH	85	32.08
NTTU University	110	41.51
Hong Bang University	70	26.42

Source: Prepared by the authors

Table 2 – Cronchbach alpha results

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Teaching Facilitator Quality			Cronbach alpha=.892	
TQ1	25.77	69.314	.686	.892
TQ2	25.81	70.393	.683	.893
TQ3	26.09	69.438	.670	.894
TQ4	25.76	70.880	.671	.893
TQ5	25.83	71.028	.654	.895
TQ6	26.01	69.806	.663	.894

TQ7	25.93	69.775	.688	.892
TQ8	25.97	69.669	.661	.894
TQ9	25.95	69.892	.709	.891
Educational Program			Cronbach alpha=.856	
ED1	15.882	25.320	.761	.879
ED2	15.854	26.619	.558	.867
ED3	15.799	26.052	.612	.834
ED4	15.843	27.513	.639	.879
ED5	15.882	26.783	.762	.828
ED6	15.882	25.238	.761	.795
Business Interaction			Cronbach alpha=.841	
BI1	13.26	15.725	.657	.806
BI2	13.28	16.137	.646	.809
BI3	13.33	16.022	.653	.807
BI4	13.23	16.073	.629	.814
BI5	13.28	16.148	.643	.810
University reputation			Cronbach alpha=.836	
UR1	14.22	15.222	.638	.803
UR2	14.16	15.452	.664	.796
UR3	14.24	15.460	.635	.804
UR4	14.09	15.313	.685	.790
UR5	14.24	16.027	.568	.822
Extracurricular activities			Cronbach alpha=.919	
EX1	17.82	29.508	.780	.903
EX2	17.97	29.889	.772	.904
EX3	17.85	29.818	.752	.907
EX4	17.81	29.667	.760	.906
EX5	17.96	29.699	.777	.903
EX6	17.91	30.092	.776	.904
BPharm Student satisfaction with educational program			Cronbach alpha=.871	
SS1	17.12	24.058	.661	.851
SS2	16.97	23.596	.734	.839
SS3	17.14	23.979	.727	.840
SS4	17.07	24.583	.605	.861
SS5	17.13	23.951	.615	.860
SS6	17.17	24.012	.699	.845

Source: Prepared by the authors

As a result, 31 observed variables are eligible for EFA processing. Due to the second EFA results, all 29 observed variables depict five factors at the Eigenvalue = 1.250, with an average extracted variance is 58.643% (>50%). Also, the KMO is .912 with the sig value is .000, of which the strong correlation with the data set is confirmed. Moreover, all the

observed variables return to the predetermined group following the variable summary after the second EFA.

Table 3 – Sampling Adequacy result

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.912	
Bartlett's Test of Sphericity	Approx. Chi-Square	18196.009
	df	2016
	Sig.	.000

Source: Prepared by the authors

Table 4 – EFA result

Item	Component				
	1	2	3	4	5
TQ1	.826				
TQ3	.767				
TQ2	.731				
TQ5	.716				
TQ8	.707				
TQ9	.694				
TQ6	.671				
BI5		.780			
BI3		.737			
BI2		.695			
BI1		.668			
BI4		.665			
EX5			.843		
EX2			.812		
EX3			.807		
EX1			.800		
EX4			.796		
EX6			.796		
UR1				.753	
UR2				.728	
UR3				.693	
UR5				.669	
UR4				.653	
ED1					.818
ED3					.775
ED6					.771
ED2					.757
ED5					.733
ED3					.723

Source: Prepared by the authors

As the Correlation analysis results, all the factors have a significant correlation with the dependent variables. Moreover, all the independent variables have no correlation; therefore, none of multi-collinearity might have occurred. The result is indicated in Table 5.

Table 5 – Correlation analysis

		SS	TQ	BI	EX	UR	ED
S	Pearson Correlation	1	.659**	.639**	.614**	.754**	.724**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	2	2	2	2	2	2
		65	65	65	65	65	65
Q	Pearson Correlation	.659**	1	.424**	.510**	.564**	.523**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	2	2	2	2	2	2
		65	65	65	65	65	65
I	Pearson Correlation	.639**	.424**	1	.437**	.558**	.546**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	2	2	2	2	2	2
		65	65	65	65	65	65
X	Pearson Correlation	.614**	.510**	.437**	1	.470**	.513**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	2	2	2	2	2	2
		65	65	65	65	65	65
R	Pearson Correlation	.754**	.564**	.558**	.470**	1	.662**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	2	2	2	2	2	2
		65	65	65	65	65	65
D	Pearson Correlation	.724**	.523**	.546**	.513**	.662**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	2	2	2	2	2	2
		65	65	65	65	65	65

		65	65	65	65	65	65
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Source: Prepared by the authors

Table 6 – ANNOVA

Model	R			Std. Error of the Estimate	Durbin-Watson
1	.799 ^a	638	628	.44409	2.069

Source: Prepared by the authors

Table 7 – Regression Summary

Model	Sum of Square	f	Mean Square	F	ig.
Regression	86.462		12.352	62.630	000 ^b
Residual	49.107	49	.197		
Total	135.570	56			

Source: Prepared by the authors

Table 8 – Regression Model

Variables	Unstandardized Coefficients		Standardized Coefficients	ig.	Collinearity statistic	
	B	SE	Beta		Tolerance	IF
	-.125	.238		.526	.599	
Q	.039	.050	.134	.774	.015	.572
I	.155	.042	.172	.724	.000	.623
R	.138	.038	.183	.661	.000	.631
X	.393	.045	.438	.752	.000	.619
D	.139	.044	.136	.126	.003	.895

Source: Prepared by the authors

Due to the result, all factor VIF is below 2.0 (<2.0) result in no multi-collinearity occurring in the model. Significantly, the result asserts that (TQ) teaching facilitator quality, (BI) Business Interaction, (UR) University Reputation, (EX) Extracurricular activities, and (EP) Educational program are accepted to be statistically significant. As a result, these factors have a positive impact on BPharm student satisfaction with educational quality. Thus, the authors affirm H1, H2, H3, H4, H5. And, the relationship is presented in the regression model as follows:

$$SS = .438*EX + .183*UR + .172*BI + .136*ED + .134*TQ$$

Conclusion

Today, pharmaceutical education quality has become a crucial concern in enhancing higher education. Additionally, educational quality is a cornerstone to the development of human resources in the pharmaceutical industry. By adapting HEDPERF, this study asserts the existence of the impactful relationship between BPharm student satisfaction various factors, including (1) Educational program, (2) University reputation, (3) Business interaction, (4) extracurricular activities, and (5) teaching facilitators quality. For academic contribution, this acknowledges crucially contributes to the development of knowledge in enhancing the BPharm student learning experience. In extensive provision, this study enriches the knowledge of higher education quality and general management. From a practical perspective, this study suggests higher education is the critical point for improvement, aiming to gain additional satisfaction from key stakeholders (i.e., students, parents, and employers). Despite the recognizable contribution, this study is limited by its research scopes that only focus on private universities in Ho Chi Minh City. And other factors might have an influence on students' satisfaction that is not included. Therefore, further studies are suggested focusing on the broader location in Vietnam. Ultimately, more factors are recommended to include in further research.

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