Service Quality Assessment at the Learning Resource Center in Can Tho University, Vietnam

Thi Trang Huynh¹, Mai Huynh Nguyen², Bang Duy Vo³

^{*1&2} School of Social Sciences and Humanities Can Tho University, Vietnam

^{*3} Learning Resource Center, Can Tho University, Vietnam

Abstract --This paper reports the findings of assessing the quality of services offered at an academic library in the Mekong Delta, Vietnam. Using the quantitative approach, 31 criteria of updated LibQual model were considered in this research. Data collected in this study include online survey of 386 students from different courses and majors in the university. Research findings indicate that students were satisfied with all library services at a high level. The findings also reveal that there were 4 groups of factors influencing students' satisfaction. They were Service Affect, Information Control, Library as a Place and Copyright. Of the four influential factors, Service Affect was identified as the strong factor while Information Control was found to be the minor. Some implications for administrators and librarians are also provided with particular regard to the assessment of the quality of library services.

Keywords -- assessment, Influencing factors, LibQual model, services, ServQual model, quality

I. INTRODUCTION

Collecting users' assessment on the quality of library services is a regular work at libraries, including the Learning Resource Center of Can Tho University. The evaluation is aimed at improving and developing library services to serve users more efficiently and friendly. Can Tho Learning Resource Center has operated many services and launched the online assessment survey to receive feedback and comments from the users. However, the number of participants being involved in the survey was quite limited and the evaluation responses were modest. It is therefore necessary to conduct a larger scale survey with more observed items to make timely changes to the improvements in the efficiency of library services in order to meet the various needs of the users in the digital age.

The study on evaluation of service quality is crucial since it benefits teachers, students, library leaders, and the university administrators. First, this study is significant because it will help teachers know how to approach and process library resources for their teaching to facilitate student learning in the field. As students know all of the services available at the library, they can plan to use these accessible sources for their own learning and research. This study may provide library leaders with insights into the current situation and conditions of information resources, learning environment and users' copyright commitment. As a result of such benefits, library leaders are likely to develop and improve services for student users. The findings from this study will help the university administrators consider how to provide financial support or budget to the library to enhance the quality of library services through training workshops or seminars.

II. METHODOLOGY AND LITERATURE REVIEW

Research has indicated that several models are widely used to assess the quality of services. These include ServQual, LibQual, ServPerf, WebQual, Lib-PerfQual, SiteQual, DigiQual, StatsQual, MINES and ClimateQual. ServQual and LibQual are two common ones with their own strengths and weaknesses. ServQual is a model mostly used in marketing and then applied in other areas [11]. ServQual survey questionnaire includes 22 criteria with 5 dimensions: tangibility, reliability, responsiveness, assurance, and empathy. The model determines the gap between the user's expectations and the actual services provided by the library. This tool helps the library leader know how customers feel about the provided services and how responsive they are to users' expectation [4], [14]. However,

Reference [5] claim that ServQual can work in an industrial environment, but not in a library. Various studies have proven that the five dimensions of ServQual do not cover all of the contents to be investigated in the context of a library and there is a need for additional quality dimensions [6].

With 22 criteria, LibQual measures library users' satisfaction of service quality through three dimensions: Affect of service, Information control and library as a place. For each criterion, the user indicates the minimum service level, the desired service level, and the perceived service performance. LibQual is used to determine the gap between the customer's expectations and the perception of the actual service received. Usually, customers' perception of service quality is mainly estimated, so finding the gap between their expectations and perceptions is not completely accurate [18]. Further more, ServQual and LibQual are used to measure the service quality of each aspect of the library. These models are not to measure the entire and large library system [10].

In Vietnam, evidence shows that ServQual and LibQual were applied, evaluated and updated to fit with library settings [1], [2], [3], [9], [15], [16]. In this study, an updated model including 22 items, 3 dimensions of LibQual (Service Affect, Information Control, and Library as a Place) combined with 9 additional items and one dimension (Copyright) was examined and accepted by a cohort of academic librarians to suit the Vietnamese academic library environment in the digital age. Most items and dimensions are from LibQual, so it is named the updated LibQual model. In this study, the LibQual model was used to measure the level of satisfaction of the learners towards library services as well as the influencing factors to their satisfaction. Nine additional items are italicized in Table 2.

III. METHODS

This study was conducted using quantitative approach. An online survey was delivered to 37,000 undergraduates and post-graduates of the university by email. As suggested by Reference [13], the minimum sample of this research is 380. 386 participants completed the survey. Of the total, 197 were females (51%) and 189 males (49%). Most of them were juniors ($n = 165$; 42.7%) and seniors ($n = 91$; 23.6%). Only 11.1% ($n = 43$) of them were sophomores. The participants were from College of Engineering Technology, College of Economics and College of Information and Technology. None of them are from School of Pre-University, Department of Physical Education and Mekong Delta Development Research Institute.

Data collected from the online survey were analysed using SPSS functions such as frequency, correlation, Mean, descriptive statistical analysis, exploratory factor analysis (EFA) and multivariate regression analysis to answer the research questions. Cronbach's Alpha in Table 1 is 0.985, indicating that the reliability of the questionnaire was high and acceptable for conducting research and collecting data [8].

Table 1: Reliability Statistics (Cronbach's Alpha)

Cronbach's Alpha	N of Items
.985	65

IV. FINDINGS

1) Assessment of library service quality by the updated LibQual model

Table 2: Library service quality by the updated LibQual model

No	Dimension	Criteria	(1)	(2)	(3)	(4)	(5)	Mean
1	Service Affect	Employees who instill confidence in users	0	7	109	147	123	4.00
		Giving users individual attention	0	19	100	140	127	3.97
		Employees who are consistently courteous	0	9	65	152	160	4.20
		Readiness to respond to users' questions	0	19	49	130	188	4.26
		Employees who have the knowledge to answer user questions	0	6	97	149	134	4.06
		Employees who understand the needs of their users	6	11	156	129	84	3.71

		Willingness to help users	0	7	104	130	145	4.07
		Dependability in handling users' service problems	1	6	109	133	137	4.03
		<i>Capacities to help users' online-study</i>	5	10	146	140	85	3.75
		Employees who deal with users in a caring fashion	0	1	31	133	221	4.49
2	Information Control	The printed materials I need for my work	1	14	65	142	164	4.18
		Print and/or electronic journal collections I need for my work	0	9	103	139	135	4.04
		Making electronic resources accessible from my home or office	0	9	103	124	150	4.08
		The electronic information resources I need	0	9	96	137	144	4.08
		<i>Reliable electronic resources</i>	6	12	131	116	121	3.87
		<i>Available data that allow me to work on my own</i>	0	8	101	145	132	4.04
		Modern equipment that lets me easily access needed information	0	8	101	123	154	4.10
		Easy-to-use access tools that allow me to find things on my own	4	11	128	122	121	3.89
		Making information easily accessible for use	0	1	30	122	233	4.52
		A library Website enabling me to locate information on my own	2	7	95	122	160	4.12
3	Library as a Place	Quiet space	9	13	121	115	128	3.88
		A comfortable and inviting location	0	8	87	113	178	4.19
		A getaway for study, learning, or research	0	6	93	102	185	4.21
		Library space inspires study and learning	5	11	123	110	137	3.94
		Library space inspires study and research in group	1	0	36	116	233	4.50
		<i>Friendly website</i>	1	7	101	130	147	4.08
		<i>Useful website</i>	4	6	79	130	167	4.17
4	Copyright	<i>Useful information for everyone</i>	0	5	86	128	167	4.18
		<i>Open access information</i>	6	9	122	123	126	3.92
		<i>Trust veracity of content</i>	0	8	91	123	164	4.15
		<i>Contents with experts and users' evaluations</i>	0	7	102	139	138	4.06

In general, 31 assessment criteria of library services were scored at good and very good scales. Of the total, 5 criteria were recorded at very good point with regard to the quality (Mean > 4.21) and 26 criteria at good point ($M = 3.41 - 4.20$). The criterion *Library makes information easily accessible for use* reached the highest score ($M = 4.52$). Ranked the second at the very good quality is the *Library space that inspires study and research in group* ($M = 4.50$). The *Employees who deal with users in a caring fashion* was the criterion ranked at the third place with an average score of 4.49. In addition, *Library staff's readiness to respond to users' questions* ($M = 4.26$) was the fourth most appreciated criterion. Ranked the fifth in the good quality list was the criterion that *Library is a getaway for study, learning, or research* ($M = 4.21$). Thus, in the top 5 criteria of good quality performance, there were two criteria in the dimension of *Library as a Place*, two criteria in the dimension of *Service Affect* and only one criterion in the dimension of *Information Control*. None of the criteria in the dimension of *Copyright* were rated very well by the users. This shows that the users were very interested in and considered the library as a place for study and research, and that the support of librarians and equipment were found to help users access information rather than the copyright of information sources.

Although all service evaluation criteria of the library were rated at good and very good scales by the students, some criteria needed to be considered. Specifically, 6 of 10 criteria in the dimension of *Service Affect* were rated at medium quality by more than 100 users (> 25%). Of the total, the criteria of *Employees who understand the needs of their users* ($n = 156$; 40.4%) and *Capacities to help users' online-study* ($n = 146$; 37.8%) were scored at the

medium level. Moreover, a number of students ranked these two criteria at bad and very bad quality, like *Library staff who understand the needs of their users* (n = 17; 4.4%) and *Staff's capacities to help users' online-study* (n = 15; 3.9%). In addition, nearly 5% of the students participating in the survey (n = 19; 4.9%) rated badly to the library staff in two criteria: *Giving users individual attention* and *Readiness to respond to users' questions*. Therefore, this suggests that library leaders need to consider how to improve their staff's work-adaption capacity.

Similarly, in the dimension of *Information Control*, two criteria were rated badly by the majority of students. They were the criterion of *Library reliable electronic resources* and *Easy-to-use access tools that allow me to find things on my own*. More specifically, the criterion of *Library reliable electronic resources* was recorded at 38.6% (n = 139) of students rating from level (1) to level (3) in which 131 students (33.9%) rated so so, 12 (3.1%) rated badly and 6 (1.6%) rated very badly. To the criterion of *Easy-to-use access tools that allow me to find things on my own*, 128 students (33.2%) rated average, 11 (2.8%) rated bad quality and 4 (1%) students rated very bad quality.

In *Library as a Place*, three criteria received the average rating with more than 100 students' votes. They were *Library space that inspires study and learning* (n = 123; 31.9%), *the library with quiet space* (n = 121; 31.3%), and the *friendly website* (n = 101; 26.2%). Moreover, there were 22 (5.7%) and 16 students (4.1%) rated that library was noisy and absolutely noisy to inspire learning and research. These findings show that although the library has created good conditions for study, some students were not really satisfied and did not value the efforts provided by the library staff. Therefore, it is recommended that library leaders should consider alternative ways to improve this situation.

Although the dimension of *Copyright* only consists of four evaluation criteria, 2 criteria received a low rating by a large number of students. No criterion was scored at good scale compared to the other three dimensions. More specifically, 122 students (31.6%) rated average, 9 (2.3%) rated badly, 6 (1.6%) rated very badly to the criterion of *Open access information*. Similarly, the criterion of *Contents with the experts and users' evaluations* is scored at average (n = 102; 28.6%) and badly (n = 7; 1.8%). Therefore, the library leaders should pay more attention to raising awareness of the users of copyright and provide more information sources together with the evaluations of the experts and users.

2) Factors influencing students' satisfaction of library services

To determine the factors influencing the students' satisfaction of the library services, the Exploratory Factor Analysis (EFA) function in SPSS was used. Four dimensions with 31 observed variables (Table 3) from the updated LibQual model were presented in the suggested model of impacting factors (Figure 1).

Table 3: Groups of observed factors

No	Dimension	Observed variables	Coded	Count
1	Service Affect	Employees who instill confidence in users	SA1	10
		Giving users individual attention	SA2	
		Employees who are consistently courteous	SA3	
		Readiness to respond to users' questions	SA4	
		Employees who have the knowledge to answer user questions	SA5	
		Employees who understand the needs of their users	SA6	
		Willingness to help users	SA7	
		Dependability in handling users' service problems	SA8	
		<i>Capacities to help users' online-study</i>	SA9	
		Employees who deal with users in a caring fashion	SA10	
2	Information Control	The printed materials I need for my work	IC1	10
		Print and/or electronic journal collections I need for my work	IC2	
		Making e-resources accessible from my home or office	IC3	
		The electronic information resources I need	IC4	
		<i>Reliable electronic resources</i>	IC5	
		<i>Available data that allow me to work on my own</i>	IC6	
		Modern equipment that lets me easily access needed information	IC7	
		Easy-to-use access tools that allow me to find things on my own	IC8	
		Making information easily accessible for use	IC9	
		A library Website enabling me to locate information on my own	IC10	
3	Library as a Place	Quiet space	LP1	7
		A comfortable and inviting location	LP2	
		A getaway for study, learning, or research	LP3	
		Library space that inspires study and learning	LP4	
		Library space that inspires study and research in group	LP5	
		<i>Friendly website</i>	LP6	
		<i>Useful website</i>	LP7	
4	Copyright	<i>Useful information for everyone</i>	CO1	4
		<i>Open access information</i>	CO2	
		<i>Trust veracity of content</i>	CO3	
		<i>Contents with the experts and users' evaluations</i>	CO4	

The four pre-requisites of EFA performance were checked: Cronbach's Alpha reliability test, number of measurement variables, number of samples, and Bartlett and KMO (Kaiser - Meyer - Olkin measure of sampling) test. Regarding the Cronbach's Alpha reliability test (Table 4), all groups of factors have Cronbach's Alpha values > 0.7, satisfying the first condition.

Table 4. Cronbach' Alpha test

No	Dimensions	Observed variables	Cronbach' Alpha
1	Service Affect (SA)	10	0.818
2	Information Control (IC)	10	0.837
3	Library as a Place (LP)	7	0.813
4	Copyright (CO)	4	0.780

The numbers of observed variables in 4 dimensions (Table 3) are all > 3. Thus, it satisfied the requirements stated by Reference [17]. In particular, the number of samples is 386, which is higher than the expected minimum (50 samples) and ideal (100 samples) required by Reference [7]. In terms of the Bartlett and KMO test: The results

of EFA (Principal components with Varimax rotation) show that KMO = 0.834 meets the requirement $0.5 \leq \text{KMO} \leq 1$ to perform EFA (Table 5); and factor analysis suitable with the research data. Furthermore, according to Reference [12] if:

KMO ≥ 0.90 : Very good; $0.60 \leq \text{KMO} < 0.70$: So so;
 $0.80 \leq \text{KMO} < 0.90$: Good; $0.50 \leq \text{KMO} < 0.60$: Bad;
 $0.70 \leq \text{KMO} < 0.80$: Well; $\text{KMO} < 0.50$: Unacceptable

Table 5. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.834
Approx. Chi-Square		7764.220
Bartlett's Test of Sphericity	df	465
	Sig.	.000

The results of KMO and Bartlett testing (Table 5) show that $\text{KMO} = 0.834 > 0.7$ should be good to perform EFA analysis. The result of Bartlett's test is 7764.220 with the observed variables in the population being correlated with each other at the significance level. $= 0.000 < 0.05$. This proves that the data used for factor analysis was appropriate. Four dimensions were extracted at the eigenvalues of 1.634 and the extracted variance was $53.126\% > 50\%$ (Table 6). The loading coefficients of the variables were > 0.5 and the study reached above the minimum sample size > 50 [7].

Table 6. Total Variance Explained

Component	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	9.750	31.451	31.451	9.750	31.451	31.451	5.846	18.857	18.857
2	2.808	9.057	40.509	2.808	9.057	40.509	4.177	13.473	32.330
3	2.277	7.345	47.854	2.277	7.345	47.854	4.144	13.367	45.697
4	1.634	5.272	53.126	1.634	5.272	53.126	2.303	7.429	53.126
5	1.549	4.996	58.121						
6	1.331	4.293	62.414						
7	1.149	3.707	66.122						
8	1.075	3.468	69.589						
9	1.070	3.451	73.040						
10	.887	2.861	75.901						
11	.800	2.581	78.482						

The results of EFA exploratory factor analysis with the rotation matrix (2 times) show that all of four dimensions of observed factors influenced student's satisfaction of library service quality (Table 7). However, out of 31 observed variables, three had no effect on students' satisfaction. They were *Print and/or electronic journal collections I need for my work*, *Library space that inspires study and research in group*, and *Useful website*.

Table 7. Rotated Component Matrix^a

	Component			
	1	2	3	4
SA 1	.779			
SA 7	.732			
SA 2	.715			
SA 8	.694			
SA 6	.637			
SA 9	.619			

SA 5	.580			
SA 10	.561			
SA 3	.543			
SA 4	.542			
LP 3		.766		
LP 1		.725		
LP 6		.698		
LP 2		.696		
LP 4		.643		
IC 10			.780	
IC 6			.764	
IC 7			.757	
IC 5			.669	
IC 1			.642	
IC 8			.595	
IC 4			.578	
IC 9			.560	
IC 3			.557	
CO 4				.553
CO 3				.533
CO 2				.512
CO 1				.508

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Pearson Correlations

Data presented in Table 8 show that there was a correlation between the dependent variable *Students' satisfaction* (SS) and four dimensions of independent variables (SA, IC, LP and CO) ($p = .000 < .05$). It indicates that the independent variables are linearly correlated with the dependent variable. The Pearson correlation value (r) between the independent and dependent variables is positive. In other words, whenever the independent variables (*Service Affect*, *Information Control*, *Library as a Place* and *Copyright*) increase, the dependent variable (*student satisfaction of the library services*) also increases. Moreover, the r value tends to approach 1, indicating that the linear correlation between the independent variable and the dependent variable is strong. In particular, the Pearson correlation coefficient with the symbol ** identifies pairs of variables with linear correlation at the 99% confidence level ($p = .01$). In terms of the strength and weakness between the independent variable and the dependent variable in the absence of other pairs of variables, *Service Affect* (SA) and *Students' Satisfaction* (SS) reach the strongest correlation ($r = 0.460$). *Library as a Place* (LP) and *Students' Satisfaction* (SS) get the weakest correlation ($r = 0.191$). It is worth noting that all the independent variables have a statistically significant linear correlation ($\text{Sig.} = .000 < .05$). Therefore, no independent variables were excluded in the performance of multivariate regression analysis.

Table 8. Pearson Correlations

		SS	SA	LP	IC	CO
SS	Pearson Correlation	1	.460**	.191**	.439**	.293**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	386	386	386	386	386
SA	Pearson Correlation	.460**	1	.419**	.777**	.506**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	386	386	386	386	386

LP	Pearson Correlation	.191**	.419**	1	.437**	.530**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	386	386	386	386	386
IC	Pearson Correlation	.439**	.777**	.437**	1	.550**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	386	386	386	386	386
CO	Pearson Correlation	.293**	.506**	.530**	.550**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	386	386	386	386	386

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

Influencing level of dimensions

To determine the influencing level (strong or weak, positive or negative) of the dimensions on the students' satisfaction of the library service quality, multivariate regression analysis was conducted. Multivariate regression is a method of estimating a single regression model with one or more independent variables. Whenever the regression model includes many dependent variables, it is called multivariable regression [7]. Thus, multivariate regression analysis in SPSS will help determine if the factors affect or do not affect students' satisfaction of the library service quality.

Regression model among 4 groups of independent variables (1) *Service Affect* (SA); (2) *Information Controll* (IC); (3) *Library as a Place* (LP); (4) *Copyright* (CO); and the dependent variable *Students' satisfaction* (SS) is shown in the following tables:

Table 9. Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.481 ^a	.231	.223	.46161	2.051

a. Predictors: (Constant), CO, SA, LP, IC

b. Dependent Variable: HL

R value in Table 9 is 0.481, indicating that the correlation between the variables in the model is very close. The value of *R*² (R Square) is 0.231, indicating the appropriateness of the model to the population. The adjusted *R* value of 0.223 means that there is a linear regression model between four groups of independent variables and *students' satisfaction*.

Table 10. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.424	4	6.106	28.655	.000 ^b
	Residual	81.185	381	.213		
	Total	105.609	385			

a. Dependent Variable: HL

b. Predictors: (Constant), CO, SA, LP, IC

The results of the ANOVA analysis of variance show that the *F*-value was 28.655 with *Sig.* = 0.000 (< 0.05) (Table 10). This means that the regression model fits the collected data and that the variables were statistically significant. Statistically significant linear relationship (*p* < 0.05) also shows that the independent variables in the model have a relationship with the dependent variable *Students' satisfaction*.

Table 11. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.384	.202		11.774	.000		
1 SA	.304	.074	.297	4.099	.000	.384	2.602
LP	-.039	.040	-.052	-.963	.336	.683	1.464
IC	.184	.070	.197	2.637	.009	.361	2.772
CO	.049	.046	.062	1.058	.291	.588	1.702

a. Dependent Variable: SS

The regression coefficients show the general significance level of the Sig components. = 0.000 (< 0.05). This proves that all independent variables have an impact on *Students' satisfaction*. The components in *Students' satisfaction* are significant in the model (except 2 dimensions LP & CO) and have a positive impact on *Students' satisfaction*, because the regression coefficients are all significant (except for the dimension LP). Reference [8] said that if $VIF < 10$, there is no multicollinearity. However, the independent variables LP and CO with Sig. = .336 and Sig. = .291 ($p > .05$) have no statistical significance. It is possible that these two independent variables contain observed variables that influence each other. Therefore, these two independent variables are excluded from the regression model. So, the standardized regression equation model is: $SS = 0.297 \cdot SA + 0.197 \cdot IC$

The regression model shows that both independent variables (SA and IC) have a positive influence on *Students' satisfaction* at the reliability of 11.774% ($t = 11.774$). This means that if the independent variable SA increases 1, the *students' satisfaction* will increase 0.279. Similarly, when the *Information Controll* increases 1 point, the *students' satisfaction* will increase 0.197 points.

The Standardized Coefficients Beta indicates the strong or weak influence between two independent variables on the dependent variable. If the Beta value is large, the influence of that independent variable is strong. Thus, in two independent variables that affect the students' satisfaction, *Service Affect* (SA) is the strong group of influencing factors with Beta of .297 and *Information Controll* (IC) is the weak group of impacting factors with Beta of .197 (Table 11).

V. CONCLUSION AND RECOMMENDATIONS

The findings from this current study show that among 31 updated LibQual criteria of service quality evaluation, five criteria were rated very well and 26 were ranked well by students. Moreover, the study found all of the four groups of factors influencing the quality of library services. These were identified as *Service Affect*, *Information Controll*, *Library as a Place* and *Copyright*. Of the four, *Service Affect* was reported as the strong group of influencing factors and *Information Controll* the weak group that influenced students' satisfaction. Besides these evaluations, some problems were identified; therefore, there are some recommendations for improving the quality of library services.

For library leaders

It is recommended that library leaders should improve the quality of Reference Service (Ask me!). The Reference staff is encouraged to be available to answer all types of questions generated by the students while using library services or resources. Particularly, library staff should be trained with in-depth knowledge of the field, communication skills and user supporting capacity. Library staff should behave students in more friendly and collaborative ways in order to improve the existing situation at the Reference Desk.

Library leaders should consider the existing searching tools and their simple functions provided to the users. More specifically, library needs to have One Search tool so that the users can access information, save time,

effort and enthusiasm in searching resources. Moreover, library should conduct more information literacy courses to train the students how to explore the information on the library website. In addition, a library website design contest should be launched to attract students' creative ideas to innovate the current library website with more friendly and useful functions to the users.

More learning space should be set up at the library to inspire student learning and research. It is advisable to organize exchanges and visits to research libraries in the country so that library staff can initiate more ideas for the intellectual space. Students are encouraged to access fulltexts from repository resources so that they can have an overview or deepen understanding of the field they are investigating for better products. However, they are advised to follow the copyright before reading, sharing and downloading information with their peers or writing for publications.

For the library staff

It is recommended that library staff should improve their own abilities in service quality and student-related factors to support student learning online and satisfy students' academic needs and interests. They are encouraged to use online learning support softwares and electronic databases and introduce to students. Their attitudes, commitment and willingness to communicate or support students are potential ways to involve students in expanding the accessible services that promote students to build on their knowledge in the learning process.

REFERENCES

- [1] Bui, T. T. D. (2015). Phan tich cac khoang cach trong danh gia chat luong dich vu thu vien theo mo hinh SERVQUAL [Analysis of gaps in the assessment of library service quality by SERVQUAL model]. *Journal of Vietnamese libraries*(3), 34-38.
- [2] Bui, T. T. D. (2016). Tim hieu mot so mo hinh danh gia chat luong dich vu Thong tin - Thu vien dua tren quan diem nguoi su dung dich vu [Introduction to some information – library service quality evaluation models based on the users' perspectives]. *Journal of Information and Documentation*(1), 37-43.
- [3] Bui, T. T. D. (2018). Xay dung cac tieu chi danh gia chat luong dich vu thong tin - thu vien tai thu vien cac truong dai hoc o Viet Nam [Developing criteria for library and information service quality evaluation at academic libraries in Vietnam]. *Journal of Vietnamese libraries*(1), 32-40.
- [4] Calvert, P. J., & Hernon, P. (1997). Surveying service quality within university libraries. *Journal of Academic Librarianship*, 23(5), 408-415.
- [5] Cook, C., Heath, F., & Thompson, B. (2003). Zone of tolerance in perception of library service quality: A LibQUAL Study. *portal: Libraries and the Academy*, 3(113-123).
- [6] Dahan, S. M., Taib, M. Y., Zainudina, N. M., & Ismail, F. (2015). Surveying users' perception of academic library services quality: A case study in Universiti Malaysia Pahang (UMP) Library *The Journal of Academic Librarianship*, 42(2016), 38-43.
- [7] Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Englewood Cliffs: Prentice Hall International.
- [8] Hoang, T., & Chu, N. M. N. (2008). *Data analysis with SPSS*. Ho Chi Minh City, Vietnam: Hong Duc.
- [9] Huynh, V. M. (2013). Su dung thang do ServQual de danh gia chat luong dich vu thu vien dai hoc [Assessment of academic library service quality by ServQual model]. *Journal of Information and Documentation*(2).
- [10] Iroaganachi, M. A., & Nkik, C. (2016). Performance assessment model for academic libraries: The Covenant University Library example. *Annals of Library & Information Studies*, 63(1), 7-15. Retrieved from <https://ezproxy.deakin.edu.au/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=lls&AN=114390142&authtype=sso&custid=deakin&site=eds-live&scope=site>
- [11] Johari, R., & Zainab, A. N. (2007). Identifying what services need to be improved by measuring the library's performance. *Malaysian Journal of Library & Information Science*, 12(1), 35-53.
- [12] Kaiser, H. (1974). An index of factor simplicity. *Psychometrika*, 39, 31-36.
- [13] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

-
- [14] Miller, K. F. (2008). *Service quality in academic libraries: An analysis of LibQual+™ scores and institutional characteristics*. (Ph.D. dissertation), College of Education, University of Central Florida Orlando, Florida.
- [15] Ngo, T. K. D., & Nguyen, T. M. T. (2017). Chat luong dich vu thu vien: Nghien cuu thuc nghiem tai mot so truong dai hoc o dong bang song Cuu Long [Library service quality: A case study of some universities in the Mekong Delta. *Tap chi Khoa hoc Truong Dai hoc An Giang [An Giang University Journal of Science]*, 18(6), 110-120.
- [16] Nguyen, T. M. T., & Tran, X. T. H. (2010). Chat luong dich vu thu vien so sanh giua hai mo hinh: Chat luong ky thuat/ chuc nang va SerQual [Library service quality - comparison between two models: technical/functional quality and ServQual]. *Tap chi phat trien KH&CN [Journal of Science and Technology Development]*, 13(1), 62-73. Retrieved from <http://dlib.dnpu.edu.vn/doc/chat-luong-dich-vu-thu-vien-so-sanh-giua-hai-mo-hinh-chat-luong-ky-thuat-chuc-nang-va-servqual-471285.html>
- [17] Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4 ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- [18] Zare Mehrjerdi, Y., Sayyadi Toranlo, H., & Jamali, R. (2009). Measuring academic libraries service quality in fuzzy environment. *Performance Measurement and Metrics*, 10(2), 94-115. doi:10.1108/14678040911005437