Impact of Library Service Quality on Students' Satisfaction in Higher Educational Environments: The Case of Wollo University

Lingerew Atinkut[1*] and Yadergal Abe[1]

[1]Injibara University, Ethiopia.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Aims: The main aim of the study is to analyze the impact of library service quality dimensions on students' satisfaction in higher education.
Study Design: Cross-sectional research design was applied. The explanatory research design was used to identify cause and effect relationships between library service quality dimensions and students' satisfaction.
Place and Duration of Study: The study was conducted in wollo university, North East Ethiopia between January 2016 and September 2017.
Methodology: 366 students were selected proportionally by using simple random sampling technique after students stratified into colleges to identify their perceptions of library service quality. Close-ended structured self-completion questionnaires, adapted from the SERVQUAL instrument were used to collect data. Descriptive statistical analysis was used to describe respondents' demographic characteristics. Correlation and multiple linear regression analysis was used to analyze the impact of each of the five dimensions of SERVQUAL on the overall satisfaction of students' about library service with the aid of statistical package for social science (SPSS) version 20.0.

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Corresponding author: E-mail: lingerewatinkut@gmail.com;

Results: Correlation of library service quality and students' satisfaction was 0.569, p<0.01. It was significant enough to show the correlation between the two variables. Since the correlation was positive, library service quality and student satisfaction are positively related, which means better library service quality brings higher students' satisfaction. The coefficient of determination i.e adjusted R-square (R^2) value was 0.843 representing that 84.3% of students satisfaction can be explained by the five dimensions of library service quality.

Conclusion: Correlational results indicate that there is a positive correlation between the dimensions of library service quality and students' satisfaction. Regression tests revealed that offering quality library service has a positive impact on overall students' satisfaction.

1. INTRODUCTION

Service quality and customer satisfaction have received a great deal of attention from both scholars and practitioners because of their relevancy and relationship [1]. Higher education is becoming a major driver of economic competitiveness in an increasingly knowledge-driven global economy [2]. A university is a community of scholars and students engaged in the task of seeking the truth. Libraries are the service providing institutions. The academic library is a role player in studying community, facilitating a place for researchers, faculty members and students to absorb their knowledge [3]. Libraries have a well-established system for document provision, a collection of statistical data and various user-oriented services. In view of the importance of service quality, libraries need to have a system for regular interaction with customers. There are many reasons [4] like customer contact, identify areas for improvement, develop a plan for library etc. for which librarians should be interested in service quality. Increasingly, global competitiveness in all occupations requires organizations to be more effective in all areas of management, but particularly in terms of customer service [5]. Customers are the most important element for any business and keep them satisfied is the result of fulfill and delight their expectations and exceed them [6], and delivering service quality to customers is a core factors for success, and it need to be continuously evaluated focusing improve the current situation if necessary [7].

The library's environment can affect students' perceptions of the manner in which they believe they can use the library, and therefore modification of the environment, in some cases, should lead to increased usage of library resources by students [8]. There is an urgent need to investigate the level of students' satisfaction to become competitive of other similar institutions. Libraries are an important consideration when students select a university or college [9], and, as a result, academic libraries can help institutional admissions boost enrollment [10]. Customers are the purpose of what we do and rather than them depending on us, we very much depend on them [11]. Rapid changes in library services and operations, demands for internal institutional accountability, and assessment expectations by external accrediting agencies have contributed to further development and application of user surveys within academic libraries.

The study has been conducted in Wollo University in both Dessie and Kombolecha campus. The study only focused on the five library service quality dimensions and their impact on student's satisfaction by using modified SERVQUAL instruments. The target group of the study was the only second year and above regular undergraduate students of 2016 Academic year. This research has extremely significant for the university, to know the student's perception and expectation level and also their overall level of satisfaction about library service. Then to take remedial measures in the case when there is a gap of service delivery for achieving its vision of being one of the top five universities in terms of outstanding quality education, research, technology transfer and community development services in Ethiopia by 2025 [12]. The obtained feedback from the students will help to prioritize the areas in which a need for continuous improvement is felt. The research seeks to add to the body of knowledge, as it will serve as the basis for subsequent studies in related fields.

The objectives of this study were to:

1. Identify the relationship between service quality factors and overall students' satisfaction.
2. Determine how the dimensions of library service quality (tangibles, reliability, responsiveness, assurance, and empathy) have impacted students' satisfaction.

2. METHODOLOGY

2.1 Research Design

Both descriptive and causal types of research design were applied. The explanatory research design was used to identify cause and effect relationships between Library service quality dimensions and students satisfaction.

2.2 Population and Sampling Design

Since it is difficult and time-consuming to study all students of the university, the study employed [13] sample size determination formula because it is one of the best methods in determining the sample size when the total number of the population is finite. By using this formula, the researcher assumes the sampling error of 5% and 95% reliability, a sample of 366 students were stratified and randomly selected out of two campuses. The standard value at 5% level of probability is 1.96 with 95% reliability and a sampling error of 5% or 0.05.

So,
$$n = \frac{NZ^2 x p x q}{e^2(N-1)+Z^2 x\ pxq}$$

$$n = \frac{7522 \times (1.96)^2 x 0.5 x 0.5}{(0.05)^2 x(7522-1)+(1.96)^2 x 0.5 x 0.5} = \mathbf{366}$$

Where; n = is the sample size for finite population N = total number of population Z= the value of the standard variate at a given confidence level and worked out from table showing area under normal curve (1.96) of 5% level of probability with 95%Confidence Interval (CI), e= acceptable error (precision) 5% (0.05) p = represents expected standard deviation which was assumed to be 0.5. The most conservative sample size that will take the value of p=0.5 and q=0.5 "[13]".

Probability sampling technique was used. Since Wollo University has two campuses, the researchers were used stratified sampling in order to give all students found in these two campuses equal chance of participation in the study. Therefore, the researchers have stratified the total population into 10 strata and applied a simple random sampling technique to select respondents from the strata. At this time, the formula $n_0 = n\ x\ p_0/N$ was used to select respondents from the strata. Where: n_o= number of respondents selected from the strata, n= sample size. P_o= number of population in the strata and N= the total number of population. The population of the strata's' and the selected sample size from each stratum is as follows (Table 1).

2.3 Data Source and Collection Techniques

Primary data for this study was collected through self-administered structured questionnaires to examine the relationships between service quality and overall students' satisfaction. The questionnaire had two sections: 1) Library Service quality, and 2) Students Satisfaction. Statements developed for measuring quality were grouped into five library service quality dimensions of tangibles, reliability, responsiveness, assurance, empathy and responses were obtained on a 5-point Likert-type scale anchored by 1 –strongly disagree to 5 – strongly agree.

2.4 Data Analysis

12 out of 366 copies of questionnaires distributed were not returned, resulting in 354 actual respondents out of the 366 targeted sample size. Multiple linear regression analysis was utilized to examine the impact of each of the five dimensions of SERVQUAL on the overall satisfaction of students' about library services by using SPSS software version 20.0.

$$Y = a+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5 + e$$

Where; Y=Overall Satisfaction of Students, X_1, X_2, X_3, X_4 and X_5= tangibles, reliability, responsiveness, assurance and empathy respectively. b_1, b_2, b_3, b_4 and b_5 are regression coefficients (beta value) that were used to explore the best predictors of overall service quality.

a= constant
e= error term. Multi colinearity diagnostic tests were conducted.

Table 1. College wise distribution of population and sample size for both campuses in each stratum

S No	College, School/ Institutes	Number of Students	Percentage	Sample Size
1	College of Agriculture	341	4.6	17
2	College of Business and Economics	689	9.2	34
3	College of Engineering	3605	47.9	175
4	College of Informatics	557	7.4	27
5	College of Natural Science	484	6.4	24
6	College of Health Science and Medicine	955	12.7	46
7	College of Social Science and Humanities	436	5.8	21
8	Institutes of Teachers Education and Behavioral Science	97	1.3	5
9	Institutes of Veterinary Medicine	168	2.2	8
10	School of Law	190	2.5	9
Total		**7522**	**100**	**366**

Source: Registrar Office (Active list of students, 2016.)

3. RESULTS AND DISCUSSION

Multiple regression analysis was employed to examine the association between service quality dimensions and student satisfaction. It is a constructive statistical technique that can be used to analyze the association between a single dependent and several independent variables. Based on this method, the five main independent variables (service quality dimensions) and dependent variables (students' satisfaction) were entered together. The details of the regression output were shown in Table 2, Table 3 and Table 4. Each of the variables had a tolerance value of more than 0.10 and a variance inflation factor (VIF) of less than 10. The finding indicated that no serious multi-collinearity problem. The tolerance values are a measure of the correlation between the predictor variables and can vary between 0 and 1. The closer to zero the tolerance value is for a variable, the stronger the relationship between this and the other predictor variables. VIF is an alternative measure of collinearity (in fact it is the reciprocal of tolerance) in which a large value indicates a strong relationship between predictor variables. From these analyses, it can be concluded that the multiple regression model of this study met the assumptions required to ensure the validity of its significance test. This indicates that there was a statistically significant relationship between library service quality dimensions and Students' satisfaction.

From Table 2, it has been seen that R-value is 0.928. Therefore, R-value (.928) for the overall service quality dimensions suggested that there is a strong effect of these five independent variables on students satisfaction. It can also be observed that the coefficient of determination i.e adjusted R-square (R^2) value was 0.843 representing that 84.3% of students satisfaction can be explained by the five dimensions of service quality or 84.3% variation of the dependent variable (Overall students satisfaction) is due to the independent variables.

Table 2. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.928(a)	.845	.843	.21022

a Predictors: (Constant), Tangibles, Reliability, Responsiveness, Assurance, Empathy

Table 3. ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	22.210	6	5.702	44.671	.000(a)
	Residual	344.717	117	2.946	0.056	
	Total	366.927	123			

a Predictors: (Constant), tangibles, reliability, responsiveness, assurance, empathy
b Dependent Variable: overall Students Satisfaction

(Service quality), which in fact, is a strong explanatory power of regression.

From Table 3, it is identified that the value of F-stat is 44.671 and is significant as the level of significance is less than 5% ($p < 0.05$). This indicates that the overall model was reasonably fit and there was a statistically significant association between service quality dimension and student satisfaction. This again indicates that all five hypotheses were accepted. Hence it can be concluded that service quality dimensions have a significant impact on students' satisfaction in Wollo university library services.

The standardized Beta coefficients give a measure of the contribution of each variable to the model. A large value indicates that a unit change in this predictor variable has a large effect on the criterion variable. The t and Sig (p) values give a rough indication of the impact of each predictor variable, a big absolute t value and small p-value suggests that a predictor variable is having a large impact on the criterion variable.

In the Table 4 unstandardized coefficients indicated how much the dependent variable varies with an independent variable when all other independent variables are held constant. The beta coefficients indicated that how and to what extent SERVQUAL dimensions such as tangibility, reliability, responsiveness, assurance and empathy influence students' satisfaction of Wollo University library services. It has been found that, assurance (Beta= 0.261,t=6.243, p<0.000) and empathy (Beta=0.284, t=11.601, p<0.000) have the highest influence or significant impact on students' satisfaction, whereas, tangibles (Beta=0.243, t=2.341, p<0.001), reliability (B=0.252, t=2.620, p<0.004), responsiveness (Beta=0.244,t= 5.834, p<0.002) have a relatively lower impact on students satisfaction of Wollo university library services.

Then the fitted Regression Model is: Overall Satisfaction of Students (Y) = 0.501 + 0.243(tangibles) +0 .252(reliability) + 0.244 (responsiveness) + 0.261 (assurance) + 0.284 (empathy) +0.05 as it is specified in the methodology parts of this study

$$Y= a+b_1X_1+b_2X_2+b_3X_3+b_4X_4+b_5X_5 +e$$

Where;
Y=Overall Satisfaction of Students
$X_1 =$ Tangibles
X_2 = Reliability
X_3 = Responsiveness
X_4 = Assurance
X_5=Empathy
a= a constant calculated from the scores of all participants
b= a coefficient that indicates the contribution of the predictor variable to the criterion variable
e= error term

$$So, Y= 0.501+0.243X_1+0.252X_2 +0.244 X_3 +0.261 X_4 +0.284X_5 +0.05$$

Among all factors, Empathy has the greatest impact on student satisfaction, which reached 0.284, while Tangibles and Responsiveness were found to have a significant least effect on students' satisfaction, which only reached 0.243 and 0.244 respectively. Therefore, the university, how to improve students' satisfaction is vital. From the statistical results in, it was confirmed that service quality perceptions and students' satisfaction of the university were related. This research concluded that service quality is the basic and also most important factor that impacts students' satisfaction. This finding reinforces the need for Wollo university library managers to place emphasis on the underlying dimensions of service quality, especially on Empathy, and should start with improving service quality in order to raise students' satisfaction.

Table 4. Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.501	.196		3.506	.000		
	Tangibles	.128	.123	.243	2.341	.001	.557	1.794
	Reliability	.213	.146	.252	2.620	.004	.399	2.506
	Responsiveness	.108	.132	.244	5.834	.002	.398	2.511
	Assurance	.544	.112	.261	6.243	.000	.414	2.414
	Empathy	.689	.148	.284	11.601	.000	.299	3.344

a Dependent Variable: Students Satisfaction

4. CONCLUSION

The correlation results indicate that there is a positive correlation between the dimensions of library service quality and students' satisfaction. Results of the regression test revealed that offering quality library service has a positive impact on overall students' satisfaction.

Among all factors, empathy has the greatest impact on student satisfaction, which reached 0.284, while tangibles and responsiveness were found to have a significant least effect on students' satisfaction, which only reached 0.243 and 0.244 respectively. Therefore, for the university, how to improve students' satisfaction is vital. From the statistical results in, it was confirmed that service quality perceptions and students' satisfaction of the university were related. This research concluded that service quality is the basic and also most important factor that impacts students' satisfaction. This finding reinforces the need for Wollo university library managers to place emphasis on the underlying dimensions of service quality, especially on empathy, and should start with improving service quality in order to raise students' satisfaction.

The following hypotheses to test this assumption have all been supported.

H_1: Tangibles have a positive and significant influence on students' satisfaction

H_2: Reliability has a positive and significant influence on students' satisfaction

H_3: Responsiveness has a positive and significant influence on students' satisfaction

H_4: Assurance has a positive and significant influence on students' satisfaction

H_5: Empathy has a positive and significant influence on students' satisfaction

CONSENT

As per international standard or university standard written participant consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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